# PULP & PAPER



THE PRODUCTION AND MANAGEMENT MAGAZINE OF THE PULP AND PAPER INDUSTRY

**"30 MINUTES from chips to high density storage"**
Operations at American Box Board's Filer City mill, above and below central panel, are all controlled on it—except refiners.

JUNE 1954

# this label → on your paper

melostrength* paper
Wet or Dry . . It's Stronger
* T.M. AMERICAN CYANAMID COMPANY ©

# puts these forces behind your sales

**ADS ON YOUR PRODUCTS AND YOUR CUSTOMERS' PRODUCTS**
**(to 20,000 readers among paper converters, merchants and salesmen)**


**ARTICLES IN THE TRADE AND BUSINESS PRESS**


**PROMOTION TO PAPER CONSUMERS EVERYWHERE**


To help increase the sale of paper products, the MELOSTRENGTH Paper story has been carried to millions of readers, listeners and viewers in the trade, business and consumer communities.

This story lifts paper above a humdrum, everyday, taken-for-granted existence by dramatizing the amazing properties and usefulness of wet-strength paper. The MELOSTRENGTH Paper program gives you, your customers and *their* customers a chance to build even greater demand for your products.

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*MELOSTRENGTH Paper is made with MELOSTRENGTH Resin (Parez® Resin 607)*

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PAPER CHEMICALS DEPARTMENT
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# What do you look for in a Doctor Blade?


You'll find all these in
Rice Barton Doctor Blades
at reasonable prices and with
prompt delivery too!

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RB6-54

## RICE BARTON CORPORATION

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*Paper Machine Builders Since 1837*

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**PULP & PAPER**

*Production and Management Magazine of the Industry*

*June 1954*
*Vol. 28—No. 6*

## IN THIS ISSUE



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**Advertising and Production Office**
370 Lexington Ave., New York 17, N.Y. ..... MUrray Hill 3-9294
71 Columbia St., Seattle 4, Wash. (MA 1626); 402 Pender St. West, Vancouver 3, B.C. (MA 7287); 3518 Dante St., New Orleans 18, La. (AM 2762); 534 SW 3rd Ave., Portland 4, Ore. (BEacon 6348); 121 2nd St., San Francisco 5, Cal. (GA 1-5887); 815 Witmer St., Los Angeles 17, Cal. (DUnkirk 9-1112).

SUBSCRIPTION RATES (for 12 monthly issues and WORLD REVIEW NUMBER, each year): United States, Canada, Mexico and other Pan American Union nations—1 yr., $3.00; 2 yrs., $5.00. Others—1 yr., $4.00; 2 yrs., $7.00
CHANGE OF ADDRESS: Please send subscription orders and changes of address to Subscription Dept., PULP & PAPER, 121 2nd St., San Francisco 5, Calif. Include both old and new addresses, and zone number.
ADVERTISING: All copy plates, instructions and insertion orders should be sent to New York office.
PULP & PAPER is published monthly, except August when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Inc.

Entered as second class matter, Dec. 4, 1951, at Post Office, Bristol, Conn., under Act of March 3, 1879. Postmaster: Please send Notice 3579 to PULP & PAPER, 121 Second St., San Francisco 5, Calif.

PULP & PAPER circulates all over the world—throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand, Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Uruguay, Venezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Italy, Netherlands, Portugal, Spain, Switzerland, Yugoslavia, India, Pakistan, Israel, Morocco, Egypt, Turkey, South Africa, China, Hong Kong, Japan, Formosa.

# COMMENT

## Why Dard Hunter Won't Retire

*A SATEVEPOST* story on Dard Hunter, the "Paper Detective" of New England, who is now past 70, closes with this observation:

"When most men reach the age of 65," he says, "they lay down their work and take up a hobby. But paper is my hobby. If I retired, I would have to give up my hobby and go to work."

People in paper are happy doing the work they like—maybe, because the paper business is so closely connected with the works of nature, and with sciences, or because they are in the 5th greatest industry in this country and the first in Canada, or because they live in good communities with many recreation advantages. There are many reasons.

A recent survey in another industry showed that when people approach retirement age, they are less eager to retire than they thought they would be in their younger years.

## What Gear Designers Seek

Valve gear designers, we are told, aim at a three-goal target:

1. To provide a satisfactory, durable, and quiet mechanism.
2. To lead the working fluid through the engine without waste.
3. To do these things within a given cost.

Isn't that what a good executive also has in mind? His job, if he is a creator of an organization, is to select people who'll work together harmoniously and efficiently—from *High Road* (Rice Barton Corp.).

## Story of a Lady Expert on Smells

A pulp or paper mill manager or executive these days must have many talents—not the least of which is patience and diplomacy in dealing with the public.

On a trip around mills recently we heard this story from a well-known mill manager. The name and place of this story are probably best left out, and he is no longer there, anyway.

"One day I was called on the phone by one of the leading hostesses of our city.

" 'I am having a big tea party this afternoon and I am very distressed because the odor from your mill is blowing right over my house. I insist that you turn it off.'

" 'But, madam,' I protested. 'I can see your house from my window and the wind is not blowing in your direction from here. What you smell is the smoke from the smelter.' "

" 'Young man,' she replied. 'Don't tell me what I smell. I have every smell in this town catalogued. Now you just turn that smell of yours off right away.' "

" 'Yes, madam, we'll do just as you say. So sorry."

And he heard no more from her. Maybe the pulp and paper industry needs more managers like him.

★ ★ ★

THE OLDEST KNOWN BIT OF WRITING in the world, the Presse Papyrus, is in the Municipal museum in Istanbul. It dates from 6000 years ago and the first sentence reads "Alas, times are not what they used to be. Everyone wants to write a book and children are no longer obedient to their parents."

# CONTINUOUS OPERATION at any speed

RELIANCE V★S DRIVE ® with

**the new *Totally-Enclosed Dual-Cooled*** PATENT APPLIED FOR **motor**


For continuous operation over extremely wide speed ranges . . . or wherever unusually severe operating conditions must be met . . . the new Reliance Totally-Enclosed Dual-Cooled Motor extends the application range of the V★S Drive. Wherever high ambient temperatures, intermittent operation, prolonged low-speed operation, or severe duty cycles pose difficult cooling problems, Reliance V★S Drive with Dual-Cooled Motors have proved to be the best answer. The new Dual-Cooled Motor is available either totally-enclosed or explosion-proof, conforming to Bureau of Mines and Underwriters' specifications, in ratings from 15 through 150 hp. D-1404-B

**GET THESE FACTS NOW!**

Your request for Bulletin C-2201 will bring you this new booklet featuring large cutaway drawing with 3-color transparent overlay showing operation of Reliance Dual-Cooled Motor, together with fact-filled bulletin showing production increases and operating economies obtainable with Reliance V★S Drive.

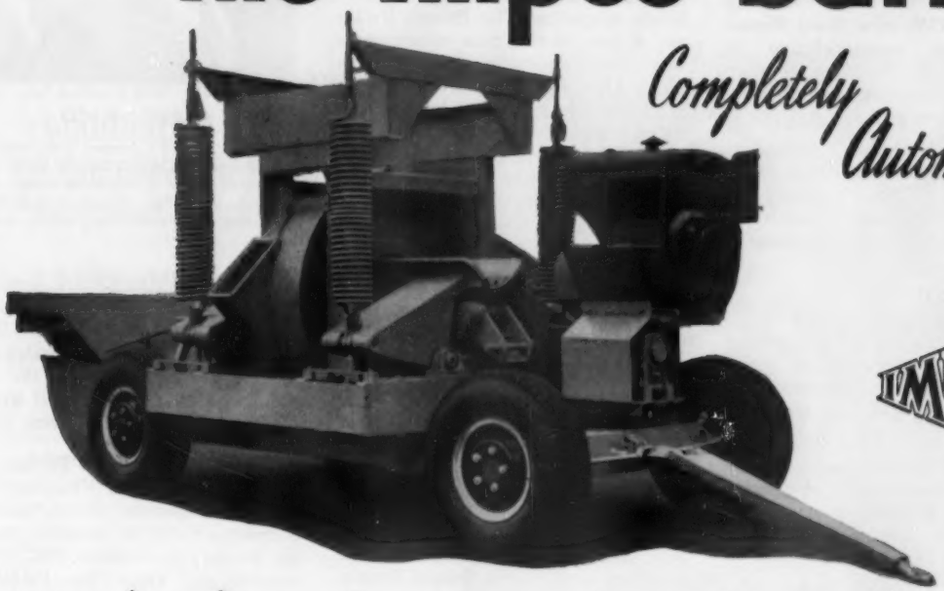
**RELIANCE ELECTRIC AND ENGINEERING CO.**

1105 Ivanhoe Road, Cleveland 10, Ohio • *Sales Representatives in Principal Cities*

*Introducing*

# the Impco barker

*Completely Automatic*



IMPCO

## *Easily handles irregular shaped logs!*

The Impco Barker has been developed to meet today's high bark removal requirements combined with low wood loss.

It is available as a stationary unit for general wood yard barking or as a portable unit mounted on a heavy frame equipped with tires for highway towing. The mobile unit can be furnished with a self-propelling drive for moves between barking sites.

Capacities up to 20 cords per hour denending on conditions, size and type of wood can be expected.

**SPECIFICATIONS:**

- **Wood size**—4′ to 8′ in length
  4″ to 18″ in diameter
- **Feed Rate**—30 to 120 f.p.m
- **Infeed and Outfeed Conveyors**—Automatic, self-centering, self-sizing
- **Barking Tools**—6 springloaded—automatic sizing for variable log diameters
- **Bark Discharge**—Mechanical ejection
- **Drives**—Gasoline or electric powered

**IMPROVED**
**MACHINERY INC.**
**NASHUA, NEW HAMPSHIRE**

*Sherbrooke Machineries Limited, Sherbrooke, Quebec Manufacture similar equipment in Canada*

F 1-a

# PULP & PAPER PERSONALS

## THE SOUTH

### Another Atlanta Rep

*J. A. DICKSON,* new Steel Strapping Division representative in Southeast states for The Stanley Works in Connecticut, is in his new office at 410 Candler Bldg., Atlanta 3

*W. H. BAILEY,* general personnel director of Sonoco Products Co., Hartsville, S. C., was elected vice president and regional director of the American Society of Personnel Administration.

*PAT SHANNON* has been named production manager at St. Joe Paper Co., Port St. Joe, Fla., succeeding Earl L. Hobaugh, who retired April 1 due to ill health. Mr. Shannon had been serving as general superintendent.

*M. A. HOGDON* has been named paper mill superintendent at Southern Paperboard Corp., Port Wentworth, Ga. His place as tour foreman was filled by John E. Rogers.

*PAUL W. SCHOEN* has been doing forest consulting work at 9615 Bellevue Dr., Bethesda 14, Md. Formerly he was with Forest Farmers' Cooperative in Georgia.

*H. J. HAMILTON* has been transferred from Rayonier's Fernandina Beach, Fla., mill to be assistant finishing room and warehouse superintendent at their Jesup, Ga., mill. Succeeding him at Fernandina is G. W. *SCOTT.*

## NORTHEAST PERSONALS

### "Ham" Helps Servicemen

*ROBERT D. GLIDDEN* has been appointed director of paper operations, Personal Products Corp., and vice president of Stonebridge Paper Corp. He is also a director of Personal Products and will be in charge of their paper mills at New Brunswick, N.J., Milltown, N.J., and Stonebridge Paper Corp., Wilmington, Ill.

*MARTINS H. ISENBERG,* president of Combustion Engineering, Inc., has announced the appointment of *ROBERT L. RIKER* as assistant to the president. Mr. Riker joined the company in 1937 and has served as assistant to the general sales manager, manager of the Proposition Dept. and assistant general sales manager.

*HARRY GILBERT,* project engineer, Brown Co., Berlin, N.H., is a ham, according to a recent issue of house magazine, *The Brown Bulletin.* A ham in this case means amateur radio operator and Mr. Gilbert's 1,000 watt transmitter is often a power for good. For instance he helps folks in Berlin, N.H. talk to their kin in the service all over the world and laughs and cries with 3 or 4 Berlin parents each month as they talk with their sons in far-off lands.

*DR. ROBERT A. BAUM,* executive vice president of Bulkley, Dunton Processes, Inc., has been ill and is on leave of absence from the company. He would like to hear from his friends in the industry; write him at P.O. Box 361, South Laguna, Calif.

*DOWNING POTTER BROWN,* recently promoted to vice president, administration, Brown Co., Berlin, N.H., died in his sleep at a Boston Hotel on April 1. He joined Brown in 1908 after graduating from Williams College and since that time had filled management positions in the U.S. and Canada. He was known as an authority in the pulp and paper industry in all parts of the business and was presently serving on several nationwide committees.

*GEORGE BRICE,* millwright foreman at Kimberly-Clark's Niagara Falls, N.Y., mill is busting vest buttons because his boy, *JAMES,* won national recognition in the American Weekly for a letter he wrote in behalf of newsboys.

*JAMES S. WALKER,* manager technical sales services, Hooker Electrochemical Co., has been elected chairman of the Labels and Precautionary Information Committee. *WILLIAM S. KNAPP,* General Chemical Div. of Allied Chemical & Dye Corp., was elected vice chairman. The committee is associated with the Manufacturing Chemists Assn. and is active in establishing and fostering principles and techniques for adequate precautionary labeling of hazardous materials.

*ROBERT Q. COLLIER* has joined the engineering staff of I. Russell Berkness Co., Richmond, Va. who represent Warren and Warren-Quimby pumps in Virginia.

### DOANE HEADS I.P. CO.

**HEADING WORLD'S largest pulp and paper company is RICHARD C. DOANE (left), elected to succeed JOHN H. HINMAN (right), who is now Chairman. Mr. Doane has been Vice Pres. and Gen. Sales Mgr. of the far-flung I.P. Co.**

*WALTER B. SHEEHAN,* president, Missisquoi Corp., Sheldon Springs, Vt., has appointed *W. E. (BILL) SMIDDY, JR.,* as general sales manager. Mr. Smiddy joined the company in 1920 and has been in their New York sales office since 1930.

*HENRY G. VAN DER EB* has been appointed division manager in charge of Eastern carton plants of Container Corp. of America, including Boston, Greensboro, N.C., Philadelphia and Oaks, Pa. *PAUL A. GRAF* becomes general manager of the Philadelphia and Oaks plants; *S. F. LEIGH* is appointed vice president in charge of boxboard and folding carton operations at the O. B. Andrews Co., Chattanooga.

*ERNEST H. MALING* has been elected vice president and treasurer, Brown Co. to succeed *HOWARD G. BRUSH,* resigned. All other officers of the company were reelected at the board of directors meeting held in April.

## We Are Still Right! Japanese Explains

Japanese Consul Shizuo Saito was quoted in a Seattle newspaper on Apr. 9 as denying an article published in the April issue of PULP & PAPER which said there were "reports" that Japanese have given up hopes for a pulp mill in Alaska. In the newspaper he was quoted as saying the reports were "groundless" and "misleading."

But to PULP & PAPER, when questioned later, he conceded that Japanese hopes now are centered on getting an Alaska sawmill, not a pulp mill. Maybe "in 5 or 6 years" they will try for a pulp mill again, he said.

(Continued on page 10)

# This woodyard chain combines high strength and ruggedness

## C-132 File hard Promal combination chain-- a popular chain for pulpwood handling

HERE'S a chain that's strong enough to handle hardwoods, yet is low in over-all cost. Little wonder that C-132 is so widely used on log conveyors.

It's the same story on every drive and conveying job. There's a chain in Link-Belt's complete line that matches your exact needs. Next time you're planning a new mill—or revamping an old one—call Link-Belt. There's a sales office or distributor near you that can save you money on your drives and conveyors.

**LINK-BELT**

**CHAINS AND SPROCKETS**

13,505

**No ONE chain serves every purpose--get the RIGHT one from Link-Belt's complete line**

SS bushed chain is a heavy-duty chain for severe service such as on barking drum.

Rivetless chain, with its light weight and high strength, is ideal for conveyors.

Class H combination drag chain offers long life for tough refuse conveying. Rigid block links are reversible.

LXS chains are made to close tolerances from carefully selected steels. Ideal for rugged drive and conveyor service.

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in all Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.


Pulpwood conveyor employing C-132 Link-Belt combination chain, with pusher attachment every 6 ft.

# *with these solid cost saving advantages*

**BONE DRY**— Only with Spray Drying can you have a guarantee of less than 1% moisture without ever having the clay over-dried. In SPRAY-SATIN you will never find a pinhead . . . never a particle of calcined clay.

**HIGHEST PURITY**—In addition to finer than usual mechanical screenings, the spray drying process makes possible a magnetic screening of the slip to produce a purity of product never before achieved.

**FREE FLOWING** — EDGAR SPRAY-SATIN flows like sand. There is no caking, no arching in silos. Works wonderfully in airveyors and gravity flow systems. You will experience real cost savings in the handling of SPRAY-SATIN.

**HIGH UNIFORMITY**— Day in and day out and year in and year out, the spray drying process produces a product of unmatched uniformity. The precise controls of the spray drying method makes this high uniformity possible.

**HIGH BULK DENSITY** — Another unique advantage of the "Spray Drying Method" is a product of unusually high bulk density. For buyers who have storage problems, or who enjoy "incentive loading" freight rates, or who use covered hopper cars, there are substantial savings in the use of SPRAY-SATIN.

**EASY MAKE-DOWN**—Before the slip enters the final spray drying process a dispersant is added. You will find that SPRAY-SATIN will go into suspension almost immediately . . . make-down time is dramatically reduced.

## Edgar Brothers Co.

**METUCHEN, NEW JERSEY**

**Try a sample run of SPRAY-SATIN in your own plant . . . the product will prove itself.**

**EDGAR BROTHERS COMPANY, 11 STATION PLACE, METUCHEN, NEW JERSEY**

Please send me, without obligation, sample as checked ⬡ 2 lb. ⬡ 5 lb. ⬡ 10 lb.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

## CANADIAN NOTES

### Ambridge Contemplates Refund; Foley Helps Raise Funds

*H. G. MUNRO*, president of British Columbia Forest Products, Ltd., Vancouver, which plans to build a kraft pulp mill on the east coast of Vancouver Island, has been elected a director of Argus Corp., headed by *E. P. TAYLOR*, chairman of the B.C. lumber enterprise.

*W. E. SOLES*, director and general manager of Anglo-Canadian Pulp & Paper Mill, Ltd., has been elected vice president according to *E. M. LITTLE*, president. Other promotions are *C. H. SMITH*, treasurer, *W. G. D. STANLEY*, assistant treasurer. Mr. Little also announced the retirement of *W. J. CLARKE*, vice president and *G. H. BRIDGE*, F.C.I.S. treasurer.




### *HERMANN FAMILY WELCOMES OLD FRIENDS AT NEW HOME*

**GEORGE A. HERMANN, retired Sales Mgr. for Hermann Claflin Refiners and son of their inventor, has moved family to attractive all-year ocean motel resort—the "Ship Ahoy" at 2937 So. Atlantic Ave., Daytona Beach, Florida—which they own. Welcome mat is out to old pulp-paper friends—phone 8544. Left to right: Daughter GEORGEANN, Wife KATE and the "Skipper"—GEO. A.**

*D. W. AMBRIDGE*, president of Abitibi Power & Paper Co., Toronto, says his company is contemplating refunding the preferred stock (there are about 1,050,416 shares with total value of $21 million), but how the redemption might be financed has not been determined.

*JOHN LIERSCH*, vice president of Powell River Co., Vancouver, B.C., was one of the speakers at a national natural resources conservation conference in Ottawa.

*ROBERT WILSON*, assistant electrical engineer at Australian Newsprint Mills, Boyer, Tasmania, before joining Sandwell & Co., has been touring West Coast mills. He is currently engaged as a member of the Sandwell field staff at the $75 million Murupara project, 180 miles southeast of Auckland.

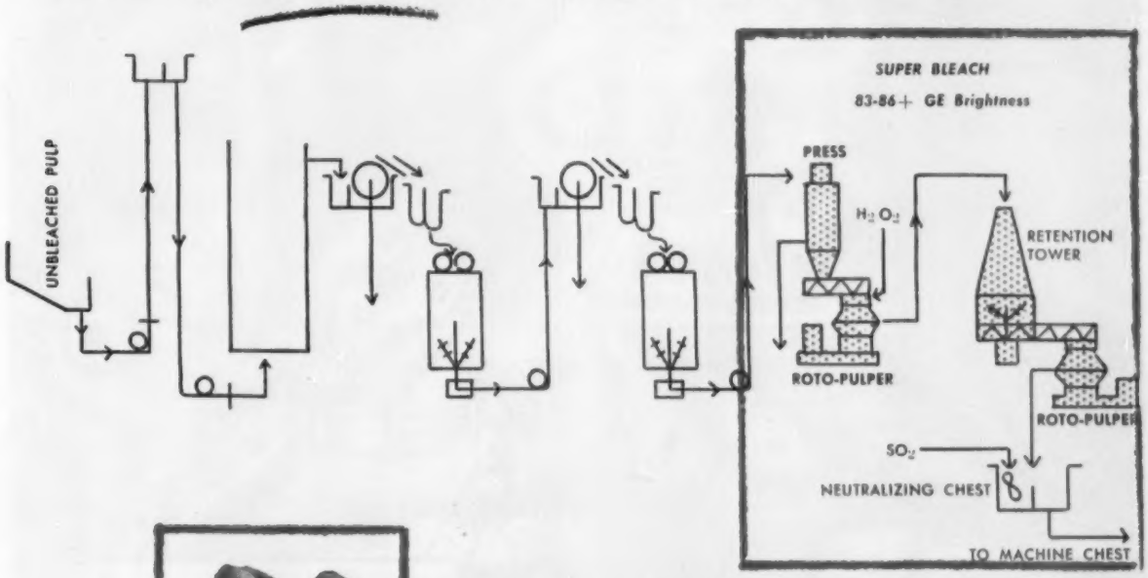
*M. J. FOLEY*, executive vice president of Powell River Co., acted as general chairman of the Roman Catholic Seminary Appeal in Vancouver to raise funds for permanent housing for student priests of a new Benedictine monastery being built near Mission, B.C.

*ALEX MCDONALD*, Pacific Mills papermaker at Ocean Falls, B.C., held an Irish Sweepstake ticket on the horse Irish Lizard. It paid $28,000, and Mr. McDonald thinks that will pay for a luxury trip through the Mediterranean he has always dreamed about.

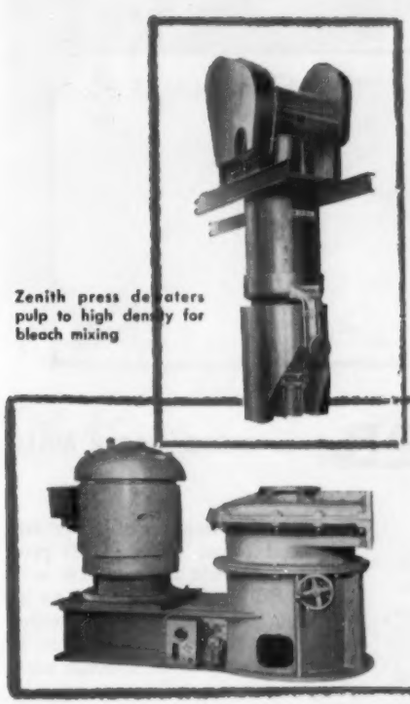
*FRED MILLARD* of the MacMillan & Bloedel mill at Pt. Alberni, B.C., and *DON LOYD* of the M & B mill at Nanaimo, B. C., are attending an advanced management seminar in June at U. of Washington.

(Continued on page 14)

# GET HIGHER BRIGHTNESS




## through SUPER bleaching!



Zenith press dewaters pulp to high density for bleach mixing

015 Roto-Pulper serves as bleach mixer, second Roto-Pulper as a denodulizer.

***A PREMIUM PULP . . . GREATER PROFITS . . . PLUS THESE ADVANTAGES: ECONOMICAL—lower chemical, steam and power costs. LOW CAPITAL COST—only one extra stage of high density required. SAFE—no damage to pulp physicals . . . yield retained . . . no reversion.***

From a semi-bleached pulp with a brightness of 71-73 GE, most pulps can be readily superbleached to 83-85 GE with one extra stage (above) using peroxide at high density. Under favorable conditions brightnesses approaching 90 GE can be obtained.

Advantages of high density bleaching and some of the inherent problems, including difficulty of introducing and distributing bleach at a uniform rate and eliminating nodules or "knots", have long been recognized. *(See "Manufacture of Pulp and Paper", pp 855-6, para. 28 and p 878, para. 51.)*

Now both of these obstacles have been removed with development of the Jackson & Church Roto-Pulper. Three years' plant experience proves conclusively that Roto-pulpers successfully mix bleach in desired quantities on a continuous basis and remove troublesome nodules.

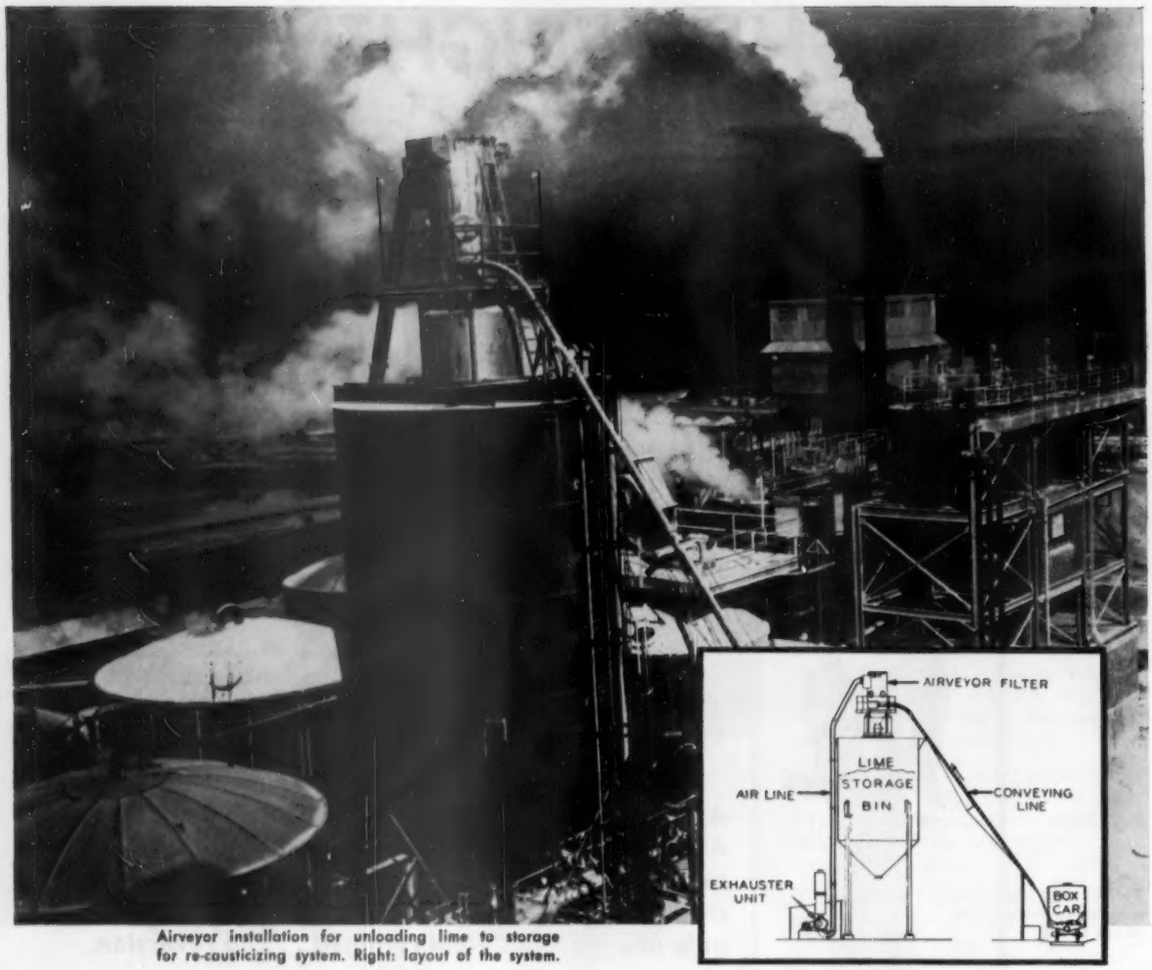
With these problems solved, the industry now can take full advantage of high density bleaching and its inherent features.

*Our engineers are ready to assist with your paper and pulp processing problems. Write to Zenith Division, Dept. P&P*

J-C

**JACKSON & CHURCH CO.** SAGINAW, MICHIGAN

*Work well done since eighty-one*




Airveyor installation for unloading lime to storage for re-causticizing system. Right: layout of the system.

# *Paper profits come with* The AIRVEYOR® *at* RIEGEL PAPER MILLS

Profits in paper-making are on the rise at Riegel-Carolina Paper Mills, Acme, N. C. because Fuller Airveyors are cutting handling costs to the core.

This new 200-ton pulp mill is equipped with Airveyors for the bulk handling of process chemicals.

*3 Airveyors are in use:*

1. Unloading pebble lime for delivery to re-causticizing system as illustrated. (Handles 10 tons per hour.)
2. Unloading pebble lime and soda ash from cars for delivery to storage. (Handles 7½ tons per hour.)
3. Unloading salt cake from storage and reclaiming from storage for delivery to the mix-tank in the Kraft mill recovery building. (Handles 7½ tons per hour.)

An increasing number of important pulp and paper mills in all producing areas are finding new savings in Fuller Airveyor systems in handling raw paper-making materials. Each Airveyor installation is custom-tailored to fit specific handling requirements, determined in advance by Fuller engineers. Such service is yours without cost—may be an important factor in finding new cost savings. Write today for complete information.

**Fuller**
**CONVEYS BY AIR**
**. . . NOTHING MOVES BUT THE MATERIAL**

**FULLER COMPANY,**
Catasauqua, Penna.
120 So. LaSalle St., Chicago 3
420 Chancery Bldg., San Francisco 4

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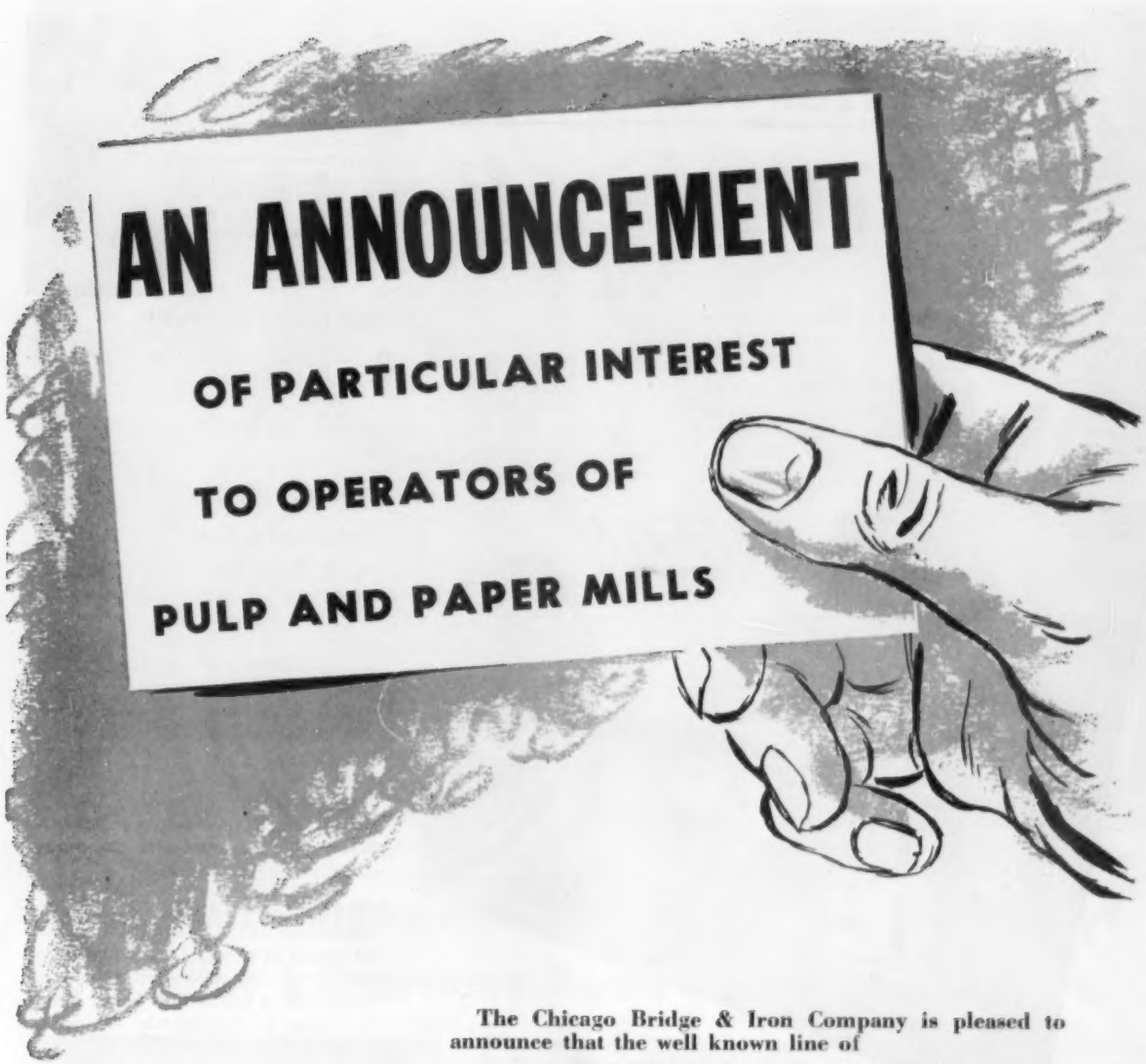
**Dry Materials Conveying Systems and Coolers • Compressors and Vacuum Pumps • Feeders and Associated Equipment**




The Chicago Bridge & Iron Company is pleased to announce that the well known line of

**CONKEY EVAPORATORS**

now extensively used in pulp and paper mills, will in the future be fabricated in CB&I's plants.

A sales and engineering office, staffed by Conkey Equipment personnel, will be maintained at 165 Broadway, New York 6, N. Y.

Since both Chicago Bridge & Iron Company and the Conkey personnel have been closely associated with the pulp and paper industry for many years, the combination is ideal to insure proper design, fabrication and erection of CONKEY EQUIPMENT.

**CHICAGO BRIDGE & IRON COMPANY**

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

CONKEY EQUIPMENT

| | | | |
|---|---|---|---|
| Atlanta 3 | 2188 Healey Bldg. | Los Angeles 17 | 1525 General Petroleum Bldg. |
| Birmingham 1 | 1525 North Fifteenth St. | New York 6 | 3391—165 Broadway Bldg. |
| Boston 10 | 1039—201 Devonshire St. | Philadelphia 3 | 1612—1700 Walnut St., Bldg. |
| Chicago 4 | 2472 McCormick Bldg. | Pittsburgh 19 | 3247 Alcoa Bldg. |
| Cleveland 15 | 2242 Midland Bldg. | Salt Lake City 4 | 540 West 17th South St. |
| Detroit 26 | 1516 Lafayette Bldg. | San Francisco 4 | 1553—200 Bush St. |
| Havana | 402 Abreu Bldg. | Seattle 1 | 1340 Henry Bldg. |
| Houston 2 | 2149 C & I Life Bldg. | Tulsa 3 | 1660 Hunt Bldg. |

## CANADIAN NOTES

*C. D. SCHULTZ,* Vancouver consulting forester, has been advising North West Pulp & Power Ltd. regarding pulpwood supply for a proposed mill in Alberta.

*H. J. MCKENZIE,* manager of Export Sales Co., Vancouver, representing Powell River Co. and Crown Zellerbach Canada Ltd. in the Oriental markets, has returned from a tour that took him as far as Penang in Malaya.

*F. G. WILLIAMS* is the new resident manager of Minnesota & Ontario Paper Co.'s newsprint and specialty mill at Fort Frances, Ont.; formerly assistant to vice pres. in charge of production, at International Falls, Minn. *RODOLPHE PARADIS,* formerly resident manager for Sorg Pulp Co. at Port Mellon, B.C., before joining Mando last year, has been appointed resident manager of the mill at Kenora, Ont.



DAVE DEZURIK of DeZurik Shower Co., proudly displays 6½ lbs. of fighting steelhead caught in Kalama River near Longview, Wash. The photog was WALTER SALMONSON DeZurik's Pacific Coast representative.

### HIS FIRST STEELHEAD!

*JAMES C. COWIE* is the new mechanical superintendent of Mersey Paper Co. at Liverpool, N.S. He succeeded the late *W. H. TUTTY.*

## PACIFIC COAST

### Galteland is Back

*N. O. "NOG" GALTELAND,* formerly with Soundview and St. Regis mills on Puget Sound, is back in Tacoma, Wash., after 2½ years abroad. He worked on air base project in North Africa, was in many countries including Sweden and on the Canary Islands for some time. He still has interest in Instrument Laboratory & Supply Service, Tacoma, with his son, *GEORGE GALTELAND.* "Nog"—address Route 2, Box 649, Tacoma—saw a granddaughter for first time.

*CLAUDE L. FARGO,* who before retirement Jan. 1 was structural engineering at new Weyerhaeuser Everett mill, is now privately employed on a consulting basis. From his home in the Seattle suburb of Richmond Beach, Mr. Fargo's current assignment is structural design for the Weyerhaeuser multi-million dollar semi-chemical plant addition at Longview, Wash.

*TOM IWATA* and *N. J. KYONO,* who handle the pulp & paper machinery exporting for C. T. Takahashi & Co., Seattle, report that *RALPH CHAPMAN* and his wife and son are in Japan to supervise the initial operation of the new Mitsui Lumber Co.'s hardboard plant, the first such plant of any size in that country. Mr. Kyono visited the plant on a recent trip to Japan and says that by late June Mitsui hopes to have three shifts per day going. Plywood mill leftovers provide raw material.

*J. W. (BILL) ANDERSON* has been promoted from asst. men's supervisor to personnel and safety supervisor of the Crown Z mill in Port Townsend, Wash.

(Continued on page 18)

Dome section of world's largest sulphite digester, SMITHlined with Hastelloy alloy F.

# Sulphite Digesters SMITHlined with Hastelloy* Alloy F Overcome Dome Pitting Problems

Sections of the above digester dome being arc welded together in the A. O. Smith vessel shop.

Digester sections being assembled prior to erection at the paper mill. Completed it will be 58 feet high, with 19-foot inside diameter.

**For many years,** A. O. Smith research engineers have been working on the corrosion problems that beset digesters in the acid pulping phase of paper manufacture. Most alloys that are satisfactory when in contact with the liquor, suffer severe pitting from corrosive action of the vapor in the digester dome.

**Extensive experience** with the nickel-base alloy, Hastelloy alloy F, in laboratory programs and field exposure tests, suggested its use for sulphite digesters.

**Three years** of field service tests confirmed our belief that Hastelloy alloy F provides a long sought solution to the problem of vapor pitting.

The metallurgical characteristics of Hastelloy alloy F are *ideally suited for the SMITHlining process* of resistance Welding. (SMITHlining is the closely controlled resistance welding process of inseparably bonding alloy sheets to carbon steel digester walls.) A. O. Smith also *developed special coated electrodes* for metallic arc welding to assure a completely uniform Hastelloy alloy F lining.

**This is just one example** of our efforts to help the Paper Industry solve its digester problems. The data accumulated from our comprehensive laboratory and field testing programs is available to you. Consult A. O. Smith on your digester problems.

*Registered Trade Name of Haynes Stellite Company, a Division of Union Carbide & Carbon Corp.

A.O.Smith
CORPORATION

VESSELS • HEAT EXCHANGERS

Chicago 4 • Cleveland 13 • Dallas 2 • Denver 2 • Houston 2 • Los Angeles 22
Midland 5, Texas • New Orleans 12 • New York 17 • Pittsburgh 19
San Francisco 4 • Seattle 1 • Tulsa 3 • Washington 6, D.C.

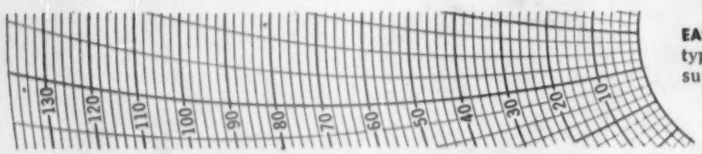
WHAT'S NEW AT BRISTOL . . . . WHAT'S NEW AT BRISTOL

**HIGH-SPEED RESPONSE AND ACCURACY** are characteristic of the new Bristol Dual-Filled Vapor Pressure Thermometers. Unlike conventional vapor pressure thermometers, the Bristol units can be read with equal ease and accuracy throughout the entire measured range.

# Another Bristol first — Dual-filled Vapor Pressure Thermometer with uniform linear scale

• These new instruments are the latest example of Bristol's continuing leadership in the field of industrial thermometry. They represent the first really important advance in filled-system thermometer design in more than 25 years. With this new development, all the valuable features of the vapor pressure system are retained. In addition to the linear scale, the elimination of ambient temperature effects makes new standards of accuracy possible.

Get the complete story on these rugged, precision instruments. Write for free 48-page bulletin T840. It will tell you all about typical installations, ranges, charts, bulbs and tubing. The Bristol Company, 142 Bristol Road, Waterbury 20, Conn.




**EASY-TO-READ.** This full-size section of a typical Bristol Dual-filled Vapor Pressure Thermometer chart shows the extreme clarity and definition of its uniform linear scale.

4.12

# BRISTOL

***POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION***

**AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS**

# WATCH YOUR WASTE LINE

## THE Sediflotor
Trade-Mark
## CLARIFIER

will help you REDUCE your WASTE instead of your PROFITS by *recovering fiber, filler and water* — as well as eliminating your white water pollution problem.

Learn how the "SEDIFLOTOR" Clarifier can help you streamline your waste water handling . . . with IMPORTANT SAVINGS to you. This coupon can bring details . . . quickly.

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## PERSONALS — Continued

### PACIFIC COAST NOTES

*DONALD WOODEN*, project engineer for Weyerhaeuser Timber Co. kraft mill, Everett, was the winner of his Toastmasters Club area "speakoff" recently and competed in the finals for the Seattle district.

*RAY SMYTHE*, West Coast distributor for Rice Barton Corp., visited the firm's Worcester, Mass., plant early in May to inspect R-B's new roll wrapping machine. He returned to Portland (Ore.) via Alaska where he has a new machine starting at Ketchikan.

*FRANCIS W. FLYNN*, assistant kraft mill superintendent, CZ Camas, transferred to Crown's Port Townsend division as assistant resident manager on May 1. *PETER M. WILKIE* was promoted to assistant kraft mill superintendent at Camas and *MAX CUSTIS* became kraft mill shift foreman.



ROBT. N. GILMORE, of Hoquiam, Wash., General Safety Superviser of Rayonier's 5 mills in Washington, Florida and Georgia—named to President's Government Safety Services to Industry Committee.

### HONORED BY EISENHOWER

*ROBERT H. EVANS* is the new chairman of the board of Puget Sound Pulp and Timber Co., as the result of a recent meeting at which all incumbent directors were re-elected. Retiring chairman is *FRED G. STEVENOT*, who seeks to lighten his business responsibilities but will continue to serve on the board of Puget Sound, and is also a director of Ketchikan Pulp Co. Mr. Evans has been a director and served as legal counsel of Puget Sound Pulp since 1936, and is also vice president, secretary, director and legal counsel of Ketchikan Pulp.

*HARRY F. KOLB*, who sells casein to the pulp and paper industry, is expanding his facilities and moving to 149 California St., San Francisco.

*J. H. LOOMIS*, manager of paper mill dept., American Cyanamid Dyestuff Div., and Mrs. Loomis, recently returned to New York from a month's visit to Pacific Coast, where he and *WILLIAM C. MARSHALL*, West Coast rep, called on Washington, Oregon and California mills.

100 years is a lot of time to be spent in the pulp and paper industry but that is the total experience represented by four Crown Zellerbach men in the Seattle office who were recently awarded 25-year watches by the company. They were *OAKLEY DEXTER*, asst. vice pres.; *CHARLES E. NICHOLS*, logging manager; *GLEN LOFTUS*, chief accountant; and *PHIL HENDERSON*, handling chip and log fuel purchases.

*L. W. MOORE*, manager of CZ Consumer Products Div., San Francisco, has been elected vice chairman of Paper Napkin Assn.

*W. H. KEPLINGER*, credit supervisor and assistant treasurer of Crown Z, San Francisco, was elected a director of Credit Managers' Assn. of Northern and Central California for two-year term beginning May 1.

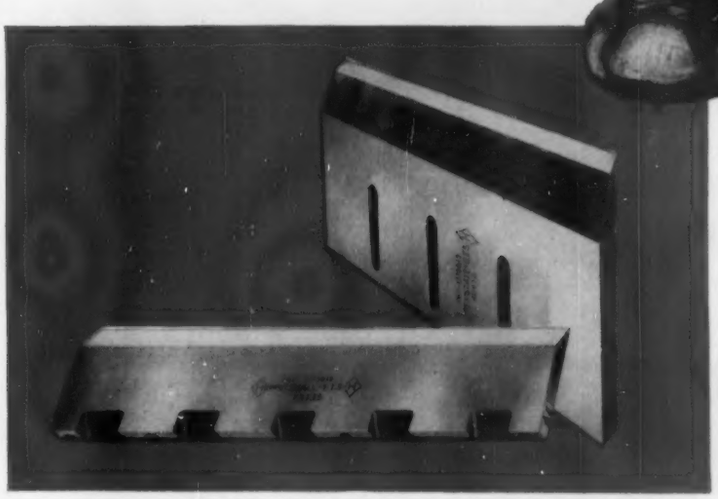
(Continued on page 22)

*built for*
# *rugged action*

**Heppenstall**

**CHIPPER KNIVES**

***durable blades* for industry**



Many leading pulp mills make Heppenstall their standard specification for chipper knives. Heppenstall's record for durability provides such production advantages as:

- **MORE CUTS BETWEEN GRINDS**
- **LESS OVERSIZE CHIPS**
- **LESS DOWN TIME**
- **LOWER OVERALL BLADE COST**

The reasons may be found in Heppenstall's high standards for the development and manufacture of chipper knives. Made from high quality, electric induction steels, these long-lasting knives are famous throughout the pulp producing industry.

Make Heppenstall *your* standard specifications.

# Heppenstall

*The most dependable name in forgings*

**PITTSBURGH 1, PENNSYLVANIA**

*Sales offices in principal cities*


E. C. Jacobi, Photo

The new look on press rolls by Lodding. Light touch.

Clean rolls. . . . Do your press rolls look like this?

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WORCESTER, MASSACHUSETTS
REPRESENTED BY
W. E. GREENE CORPORATION • WOOLWORTH BLDG., NEW YORK

# WOOD PULP

# PAPER

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BULKLEY, DUNTON PULP CO., INC.
BULKLEY, DUNTON PAPER CO., S. A.
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295 MADISON AVENUE, NEW YORK 17, N. Y.

*Offices and representatives in 60 cities*
*in the United States, Europe, Latin America, Africa, and Asia*

## PULP & PAPER PERSONALS — Continued

### MIDDLE WEST NOTES

**Bob Stewart Retires**

*ROBERT (BOB) STEWART*, veteran superintendent and more recently papermaking consultant at KVP, Parchment, Mich., has retired. Born in St. Andrews, Scotland, he was 20 years in Scottish mills before migrating to the U.S. in 1905. He is 67 years old. He joined KVP in 1932.

*MELVIN W. PAULY* has been appointed general manager of sales and *HAROLD H. LAYRITZ* assistant general manager of sales of Lunkenheimer Co., Cincinnati, according to *HARRY A. BURDORF*, vice president in charge of sales.

*L. V. (LUKE) THIEL* has been appointed Pacific Coast rep for Orr Felt & Blanket Co., Piqua, O.

*LEO H. SCHOENHOFEN*, senior vice president of Container Corp. of America, has announced appointment of *LOWELL W. LONGSTRETH* as division manager in charge of operations at Cleveland, Wabash, and O. B. Andrews Co., Chattanooga; *GEORGE L. RUSSELL* as division manager of Lake Shore mill and carton plant, Chicago; *DORR O. JENNINGS* as general manager at 35th Street, Chicago, plant; *J. D. SCOTT*, general sales manager for cartons at 35th Street and Lake Shore plants; *R. W. LONG*, general manager at Lake Shore mill; *L. B. CHAMBERLAIN*, general manager at Wabash; *E. A. GUERRERO* to sales manager for dry cartons at Lake Shore and 35th Street; *FRANK W. HACKMAN*, plant manager at 35th Street.

MYLES W. REIF (left), Vice Pres. and Mgr., Blandin Paper Co., and Chairman of Northwestern Supts. Division. On right are Mr. and Mrs. LOU H. BREYFOGLE—he has been sales rep. 38 years for Draper Felt, out of Kalamazoo. An industry scholarship fund for Western Michigan College Paper Technology Dept. has been named in his honor.

ATTENDED MINNEAPOLIS meeting (l to r): EDGAR HESSE, Supt. Finishing, Nekoosa-Edwards Paper Co.; JAMES BANKS, Sales Mgr., Felker Bros. (fabricators of stainless and alloy steels), Marshfield, Wis., and Mrs. Banks.

## Over 350 Attend Minneapolis Meeting

Despite snow and rain that made for hard driving, about 350 mill men, suppliers and wives attended the Superintendents Northwestern Division meeting in May in Minneapolis. Myles Reif, v. p. and manager, Blandin Paper, chairmanned.

Lou Breyfogle of Kalamazoo was feted because of the recent naming of a Breyfogle Scholarship Fund, being raised by suppliers, for the paper technology department at Western Michigan College.

(Continued on page 26)

# A Progress Report to the Paper Industry

***...A factual statement of the impressive progress of the Solvay method of producing and using chlorine dioxide for pulp bleaching***

About a year ago, Solvay Process Division announced that a new system for producing and using chlorine dioxide as a bleaching agent had been in successful, commercial operation in one of the country's newer paper mills for more than one year. We also reported that operational results had exceeded expectations.

Since that time, this subject has been widely discussed throughout the industry. The past year has seen wide acceptance and rapid expansion in the adoption of this new bleaching system. With the thought of keeping you up to date, we present the following progress report:

**GROWTH**

Four major paper companies are now using the Solvay system for producing and using chlorine dioxide, with four additional plants under construction and due to go into operation within the year. The original plant installation has now been in continuous operation for two years.

**OUTPUT**

Over 1400 tons of pulp are currently being bleached each day by the plants now in operation. The total output is expected to exceed 2600 tons per day by the end of the year, when the plants under construction get into production.

**GRADES OF PULP**

Three grades of paper-making pulp—kraft, sulphite and neutral sulphite semi-chemical—are currently being bleached with chlorine dioxide produced by the Solvay method.

Before the end of 1954, dissolving grades of pulp (both prehydrolysis kraft and sulphite) for the production of synthetic fibres and cellophane will be in regular production.

**QUALITY IMPROVEMENT**

The combination of chlorine dioxide and the Solvay chlorine dioxide bleaching process has established new standards of quality, dependability and color permanency.

- Color brightness, running from G.E. 88 to 94, is regularly obtained on paper-making grades of kraft and sulphite pulp *without loss of strength.*
- The product is cleaner. Virtual elimination of wood dirt has resulted in a corresponding reduction in shives.

  Greater yield means increased production.
- In addition, it supplies the high quality and the control of viscosity which are so important in the dissolving grades of pulp.

The Solvay chlorine dioxide bleaching process is operated in a specially developed bleach cell unit designed by Improved Machinery Corporation. The chlorine dioxide manufacturing unit and the flow bleaching process have been, and will continue to be, available to the paper industry on a non-exclusive contract and on a royalty-free basis. In addition, Solvay's Technical Service is available without charge, both during the design stages and the start-up and training periods.

If you would like to have further information regarding the application of this process in connection with a specific phase of your operations, write to us in confidence, giving the details. We will be glad to supply further information.

SOLVAY

SOLVAY PROCESS DIVISION

Allied Chemical

ALLIED CHEMICAL & DYE CORPORATION

61 Broadway, New York 6, N. Y.

## PULP & PAPER PERSONALS — Continued

### MIDDLE WEST NOTES

*CLIFTON P. BOUTELLE* is a new general superintendent of Gardner Board and Carton paperboard mill in Lockland, O., and *LARS H. SJODAHL* is technical supervisor.

*RONALD R. SIMONDS* has been appointed assistant sales manager by Beloit Iron Works, Beloit, Wis.

*J. B. FAEGRE*, president of M & O Paper, announced all directors re-elected—he and his son, *ROBERT*; *DANIEL F. BULL*, *T. S. DANIELS*, *C. T. JAFFRAY*, *C. T. MURRAY* and *H. W. SWEATT*, all of Minneapolis; *GORDON COCKSHUTT*, Brantford, Ont.; *ROBT. S. WALDIE*, Toronto; *SERGE SEMENENKO*, Boston; and *CHARLES GARLAND*, Baltimore.

New production assistant to the executive vice president of Minnesota & Ontario Paper Co. is *E. L. LAMB*. Other recent Mando promotions: *DR. JOHN O. BURTON* to asst. director of research in charge of pulp, paper and by-products; *DR. WILLIAM H. McPHERSON, JR.*, to manager of research lab; *CECIL L. HESS* to supervisor of pulp, paper and by-products research; *DONALD K. KASLOW*, asst. to vice pres. in charge of production at International Falls.

*WALTER CLOUD, SR.*, manager of U. S. Paper Mills, West DePere, Wis., passed away April 14. He had been at DePere since 1936; began in the industry at Ball Bros., Noblesville, Ind. One of his two sons, Walter, Jr., is superintendent at DePere.

*A. T. LUEY*, formerly with Sutherland Paper Co., Kalamazoo, is now executive secretary of The Boxboard Research & Development Assn., with new office in Chicago.

*FRANK G. JEWETT*, formerly with S. D. Warren in the East, is now coating mill supt. for St. Regis, Kalamazoo. He and wife and three children have moved to Kalamazoo.



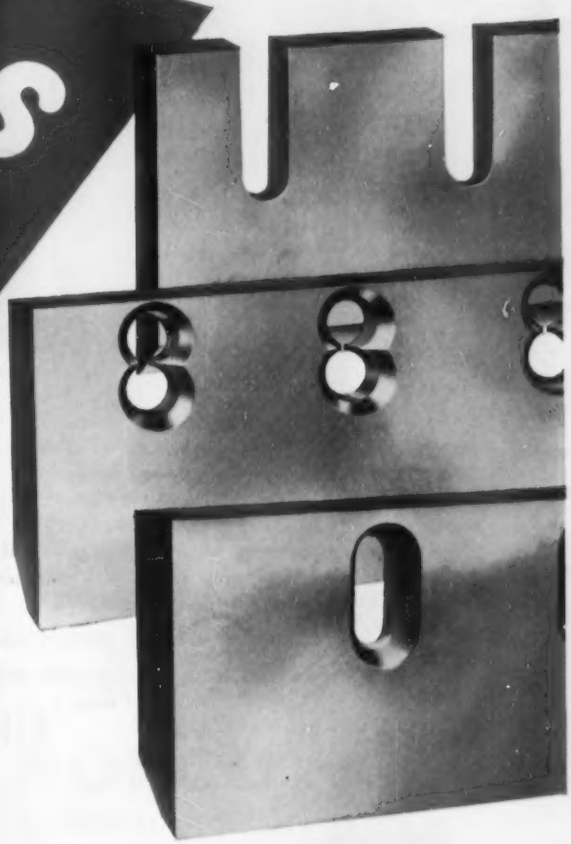
***KALAMAZOO LADIES NIGHT***

**TOP—Canadian visitors at annual LADIES NIGHT of Michigan Supts. Division held in Kalamazoo in May were DAVID KERR, Riordan Sales Corp., Montreal, and PETER MacDOUGALL, Pulp Sales, Howard Smith Paper Mills, Montreal.**

**BELOW—YVONNE, daughter of the late JOE SCHEUERMANN, who was one of the most widely known sales engineers in this industry, and her husband, JACK VANDERBERG, of D. A. Howard Co., Kalamazoo, at Ladies Night.**

# Get the DUST OUT of your PROFITS

...with SIMONDS T-18 CHIPPER KNIVES



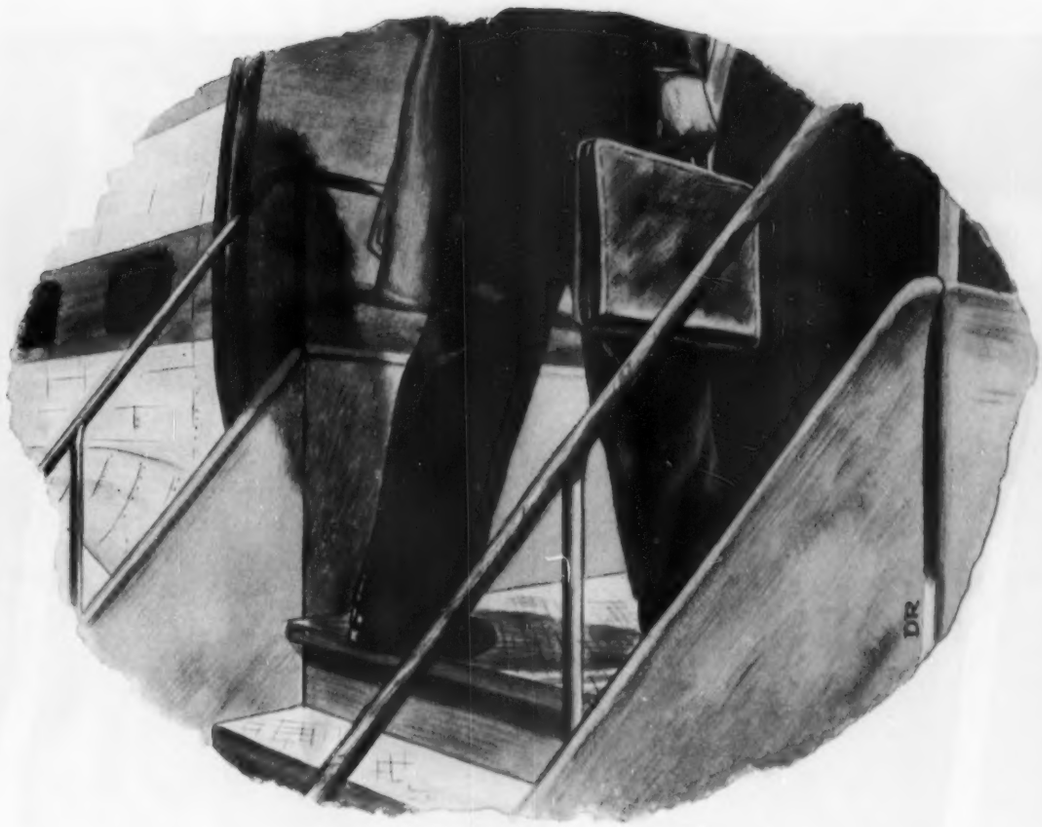
More usable chips . . . clean-cut and uniform in size . . . with a minimum of slivers and dust . . . this is what you *want* from your woodroom . . . this is what you *get* with SIMONDS T-18 KNIVES on your chippers! Made of extra tough steel developed and poured in Simonds own Steel Mill, these rugged, shock and abrasion resistant knives are known for their ability to take the high speed, brutal beating of chipper operation . . . to hold a keen cutting edge . . . to turn out clean-cut, uniform chips. Try T-18 Knives on *your* chippers . . . get the dust out of *your* profits. Order through your Industrial Distributor.

*For* **PROMPT DELIVERY** *and* **PERSONAL SERVICE** *. . . call your* **INDUSTRIAL DISTRIBUTOR**

**SIMONDS SAW AND STEEL CO.**

FITCHBURG, MASS.

*Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que.*
*Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Simonds Abrasive Co., Phila., Pa. and Arvida, Que., Canada*



# Because a Paper Plant needed help...

*Foam was causing the dandy roll in a midwestern plant to pick up large quantities of both water and stock. Called in for help, a member of Nopco's technical staff sprayed Nopco® KFS on the wire in a solution, one lb. per ton of paper. The stock ceased to pick up; the water was reduced to a fine spray. So impressive was the demonstration, they hastily called the firm's president from a conference to "come and see." Naturally, the plant has now standardized on KFS.*

☆ ☆ ☆

The technical service men of Nopco's Paper Division have just one mission in life—to help you. They'd be excellent men for you to know.

It may well be that some obstacle in efficient sizing, or foam dispersal, or pitch control, which has your staff stumped right now, is one that our laboratory removed only last month for some manufacturer a thousand miles from you.

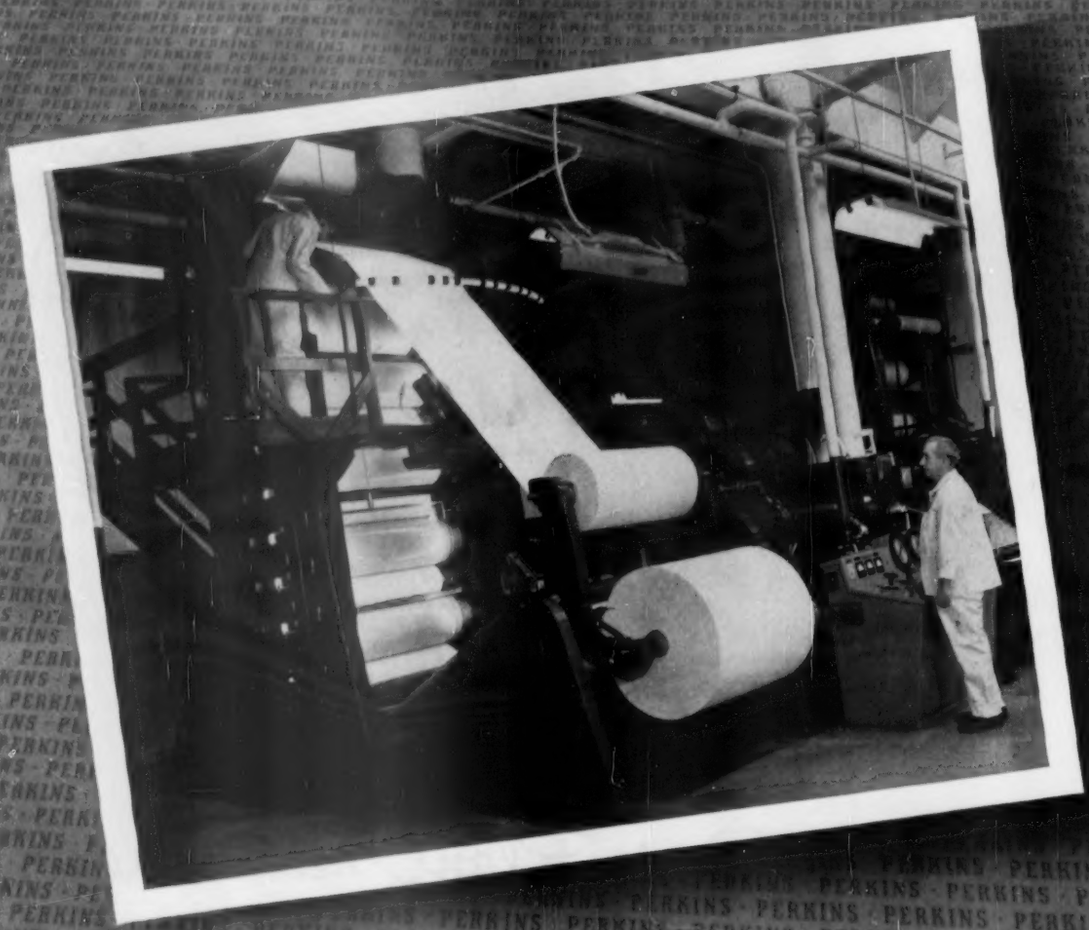
In the pilot plant in Nopco's Research Laboratories, these men work constantly (when they're "at home") on practical problems submitted to them from mills the country over. They don't know all the answers yet, but they have helped many plants to produce a better sheet of paper, at lower cost.

Nopco was founded on research. It has grown to its present position by research—which simply means finding new and better ways to do things which need doing. But the knowledge thus gained, after all, does us little good until we share it with you. Our technical men are our medium of sharing it. Put your toughest problem up to them. Why not do it today?

**NOPCO**
**CHEMICAL COMPANY**
Harrison, New Jersey
Cedartown, Ga. • Richmond, Calif.

**LOOK TO NOPCO ALSO AS YOUR SOURCE OF SUPPLY FOR:**

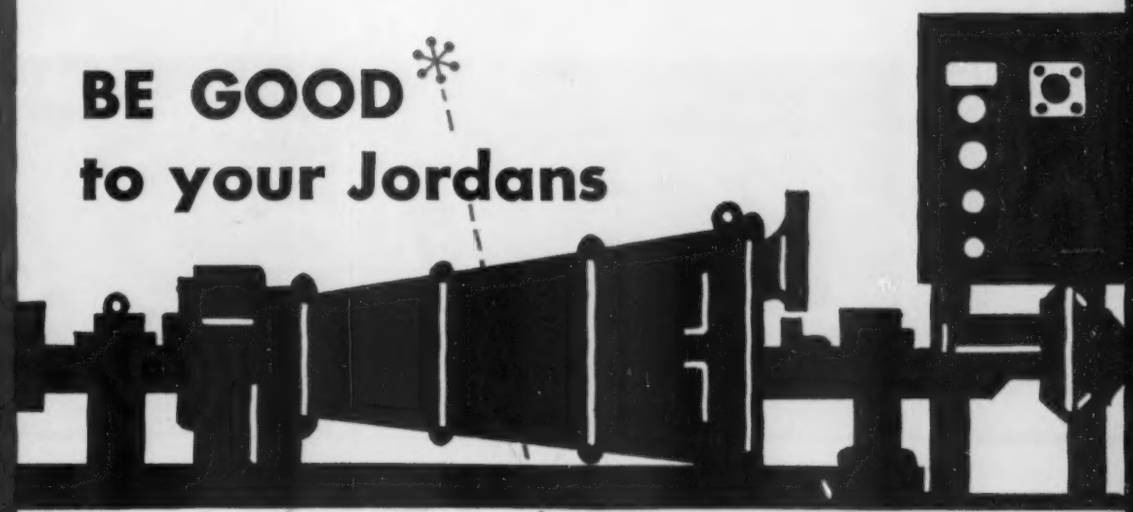
Foam Killers • Sulfated Oils • Wax Emulsions and Emulsifiers
Emulsified Resins • Coating Compounds • Rewetting Agents
Insoluble Metallic Soap Dispersions • Sheet Formation Aids
Plasticizers • High Free Rosin Sizes • Pitch Dispersants.



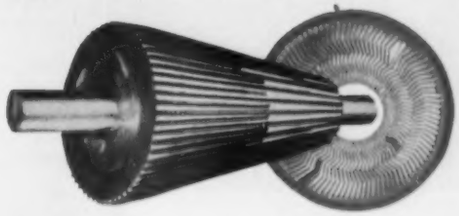
## Photograph Paper Must Have Perfect Finish

— And here is a Perkins 50" Nine-Roll Web Supercalender, made for Eastman Kodak Company finishing world famous photographic printing papers at high speed . . . Operating nip pressure 2,000 pounds per lineal inch at the bottom nip . . . five (5) Farreloy chilled iron rolls, ground to a .5 micro-inch finish . . . four (4) Perkins cotton rolls . . . Timken roller bearings . . . gravity feed lubrication . . . hydraulic pressure . . . equipped with revolving reel for wind and unwind . . . Perkins semi-steel cast frame for rigidity . . . no vibration. Designed and built for tomorrow's high speeds and pressures.

# BE GOOD to your Jordans



## and they will be good to you



Whatever Jordans you use — old or new — their quality of performance depends on the **Plug and Shell Fillings.**

Equipment, facilities and years of specialization make Bolton unique as suppliers of superior Fillings **that fit any Jordan — in any design — in any metal.**

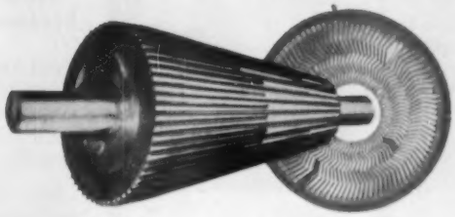
**KNIVES** are supplied in any size, shape or design for brushing, cutting and all variations in between.

**WOODS** supplied are our own selected kiln-dried oak, maple or South American hard wood. Special material separators are also available.

**RIGID PLANT CONTROL** governs the complete fabrication of all **BOLTON Fillings** from the raw metal, right through our own special heat-treating and machining processes, to the finished product.

# BE GOOD to your Jordans

## and they will be good to you



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Be good to your Jordans — get **BOLTON Fillings** — and your Jordans will be good to you.


## John W. BOLTON & Sons, Inc.

**EMERSON MANUFACTURING DIVISION**

**Lawrence, Massachusetts, U. S. A.**

*These Pennsalt Plants at Portland, Ore. (left) and Tacoma, Wash.*

*New Weyerhaeuser Timber Co. mill at Everett, Wash. Photo courtesy PULP & PAPER*
*. . . supply industry in the Northwest with basic chemicals . . .*

*Bonneville Dam. Photo courtesy Bonneville Power Administration, Portland, Oregon*
*. . . made with the help of Hydro-Electric Power . . .*

*. . . and utilize all types of bulk transportation to "deliver the goods"*

# Helping to Build the Northwest

**How Pennsalt, a basic chemical manufacturer has become an integral part of a great growing area**

With two busy plants in the Northwest, at Tacoma and Portland, Pennsalt has long been an active, dedicated contributor to this region's development. Because of their location, these plants save nearby industry time, trouble, and expense in the buying of chemicals.

Many current Pennsalt products have been improved specifically to meet the needs of this area. For example, Pennsalt Sodium Chlorate is now helping to produce better, whiter pulp.

Handling methods, too, have been tailor-made to the Northwest: Pennsalt ships its products in drums, tank cars, tank trucks, barges—by whatever means best serves the customer.

The Company has also developed numerous basic chemicals and chemical specialties required by Northwest industries. For example, Pennsalt insecticides are widely used by apple growers.

Pennsalt's success is in no small way dependent on the region's vast resources. The Company extensively uses hydro-electric power, and the nearby ocean, through solar salt beds, provides an essential raw material.

And yet, with all its accomplishments, the Northwest is young. In coming years it will grow and prosper in a thousand ways. Pennsalt intends to contribute to that future in every way possible.

**Pennsalt Chemicals**

DISTRICT OFFICES AND TELEPHONES

Berkeley 4, Calif.—Ashberry 3-2537 • Portland, Ore.—Atwater 7655
Los Angeles 11, Calif.—Jefferson 6244 • Tacoma 1, Wash.—Market 9101

**PENNSYLVANIA SALT MANUFACTURING COMPANY OF WASHINGTON**
**2901 Taylor Way, Tacoma 1, Washington**

how to provide

# PROTECTION · *PLUS*

for enclosed
gear drives . . .

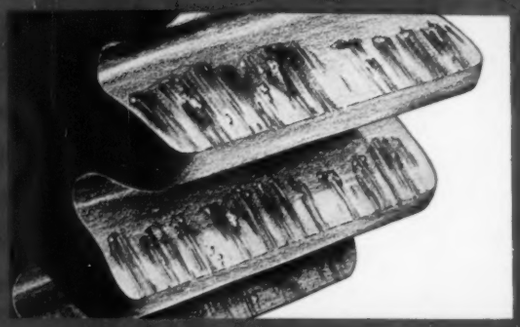
# SWITCH TO GULF E.P. LUBRICANTS

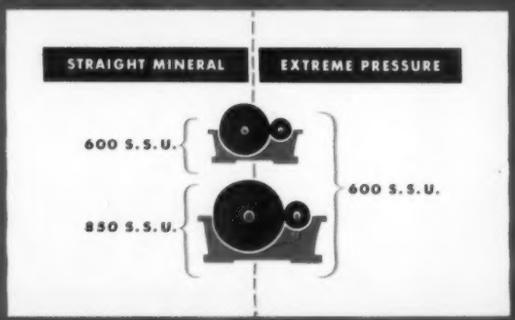
## . . . and save maintenance dollars!

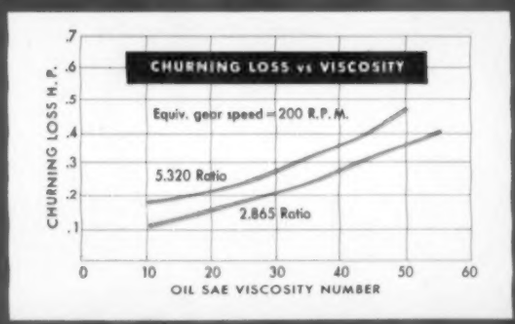
Gulf E. P. Lubricants combine all the properties that count in an extreme pressure lubricant: high film strength, excellent rust preventive properties, good water-separating characteristics, good stability, and they are noncorrosive, nonfoaming. Their use insures longer gear and bearing life and lower maintenance costs for gear drives under a wide range of operating conditions.

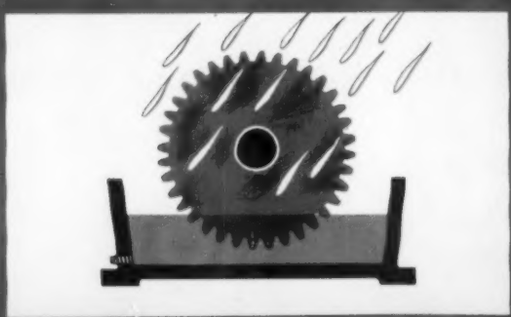
Gulf E. P. Lubricants are available in the proper viscosity for every gear requirement ranging from 55 to 1000 SUV at 210 deg. F. For specific recommendations for your equipment, call in a Gulf Sales Engineer today. Write, wire, or phone your nearest Gulf office or send the coupon on the last page.

GULF INDUSTRIAL LUBRICATION





# *Practical advantages of Gulf E. P. Lubricants:*

## More effective protection against tooth scoring and welding

Gulf E. P. Lubricants are specially compounded to provide extra film strength and to prevent metal-to-metal contact under most conditions of overload and shock load. That's why, when you use Gulf E. P. Lubricants, you can usually avoid tooth damage like that shown at the left and have an extra margin of protection when production demands approach or exceed the rated capacity of the equipment.

## Fewer lubricant grades needed—lubricant storage and handling simplified

Because Gulf E. P. Lubricants have superior film strength, it is often feasible to use a lower viscosity grade than would be possible with a straight mineral oil. This is a practical advantage for plants operating several different types of gear drives. If, as pictured at the left, two straight mineral oils of different viscosity are specified, one grade of Gulf E. P. Lubricant may well do the job of both. Thus lubricant storage and handling is simplified, and there is less chance for confusion in the oil house.

## Reduced power loss caused by churning in splash-lubricated units—lower power costs

There is another advantage in using a lower viscosity oil in splash-lubricated units where power loss due to churning is appreciable. Since this loss is almost directly related to oil viscosity, the use of lighter Gulf E. P. Lubricants often means reduced heat generation and lower power costs.

The chart at the left shows the effect of viscosity on the churning loss in horsepower of a typical gear unit.

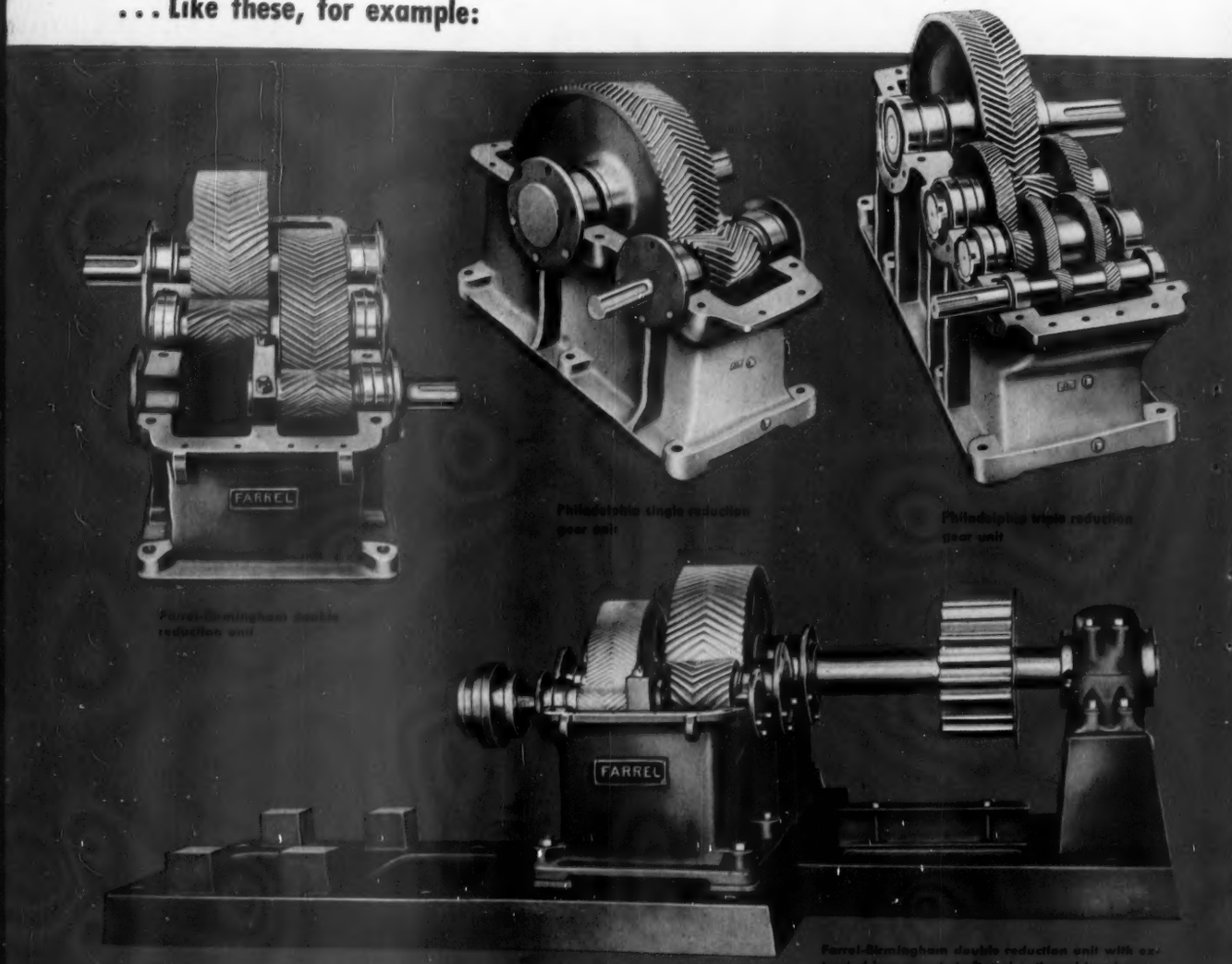
## Excellent protection against rust

The ability to protect polished gear teeth and antifriction bearings against rust is an important property of a gear lubricant, and is essential in a lubricant for units which are occasionally idle.

Gulf E. P. Lubricants have highly effective rust preventive properties—insure against excessive wear and enlarged tolerances which might result from the presence of abrasive rust particles.

# *Gulf E. P. Lubricants are ideal for all types of gear drives*

**. . . Like these, for example:**




Philadelphia single reduction gear unit

Philadelphia triple reduction gear unit

Farrel-Birmingham double reduction unit

Farrel-Birmingham double reduction unit with extended low speed shaft and outboard bearing.

**GULF OIL CORPORATION · GULF REFINING COMPANY**
**1822 Gulf Building, Pittsburgh 30, Pa.**

Gentlemen:

I would like further information on Gulf E.P. Lubricants:

- ☐ Please have a Gulf Sales Engineer call.
- ☐ Please send me a copy of your pamphlet "Gulf E.P. Lubricants for Reduction Gear Drives."
- ☐ Please arrange to show a group in our plant the new Gulf Color Slide Film, "Gears and Their Lubrication."

Name_____

Company_____

Title_____

Address_____

GULF INDUSTRIAL LUBRICATION

# New Masoneilan Moisture Boosts Paper Production

A manufacturer of board says, "Our production is up 7% a day, since installing a Masoneilan Moisture Control System." Another mill making dissolving pulp reports, "A Masoneilan Moisture Control System has helped us increase our tonnage by 10% . . . and cut rejects due to incorrect moisture from 10% to 1%."

And that's not all! Along with many other paper manufacturers of all kinds, these mills are making a *better, more uniform* paper at *lower cost* with the versatile new Masoneilan Moisture Control System. Here's how and why:

**A Masoneilan Moisture Control System** maintains an average moisture content across the sheet. Does not rely on "spot" measurements.

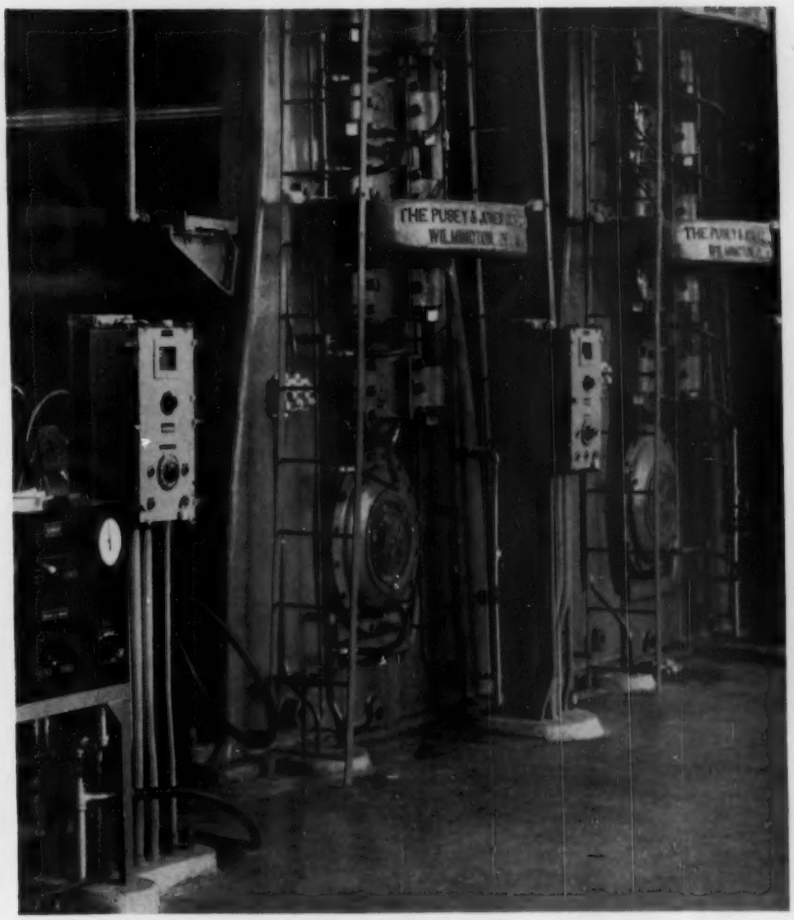
**It controls moisture content** at each of *several* points on the machine — from as high as 50% to as low as 3%.

**Sensitive yet stable,** it holds moisture content accurate within ¼ of 1%.

**Can be used for any speed machine** — any width machine. Is suitable for *all* grades or weights of paper.

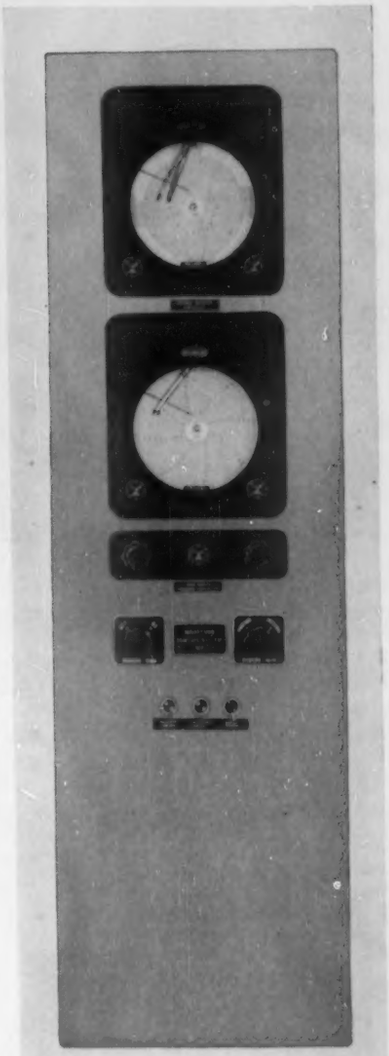
**Provides individual pneumatic break control** at each control station. Cuts downtime due to dry breaks . . . speeds recovery since it automatically handles steam to machine under all conditions.

**Eliminates human errors . . .** makes for more uniform sizing and coating. Pays for itself in a very short time — in some cases in less than a week.



**CONTROLS MOISTURE CONTENT AT...**

Breaker Roll
Single or Multiple
Dryer Sections
Size Tub
Coating Press
Reel



# Control System as much as 7%

**Points up machine troubles** such as improper drainage, variations in sheet furnish, changes in press operation, freeness, consistency, felts or air removal.

You should know more about this versatile Moisture Control System ... and what it can do for your mill. Complete information will be furnished on request.

MASONEILAN

## MASON-NEILAN REGULATOR CO.

**1181 ADAMS STREET, BOSTON 24, MASS., U. S. A.**

*Sales Offices or Distributors in the Following Cities:* New York • Syracuse • Chicago • St. Louis • Tulsa Philadelphia • Houston • Pittsburgh • Atlanta • Cleveland • Cincinnati • Detroit • San Francisco Boise • Louisville • Salt Lake City • El Paso • Albuquerque • Odessa • Charlotte • Los Angeles Corpus Christi • Denver • Appleton • Birmingham • New Orleans • Dallas • Seattle Mason-Neilan Regulator Co., Ltd., Montreal and Toronto

Manufactured under Mason-Neilan Patent No. 2,659,987 Dated Nov. 24, 1953

## *Meet the man* you can call with confidence to solve your thermal insulation problems

**To insulate outdoor tanks** with complete weather protection, these skilled J-M applicators follow a specification developed by Johns-Manville. Here they are fastening J-M Asbestocite* Sheets over J-M Zerolite* Insulation. J-M 85% Magnesia Insulation is also widely used for this type of equipment

## *He is your J-M Insulation Contractor*... the man with the world's most complete insulation engineering service

"Insulation is no better than the man who applies it." Today, with rising fuel and maintenance costs, it is especially important to place your insulation job in skilled hands. The scientific application of J-M quality insulations by J-M Insulation Contractors will assure you of the maximum return on your insulation investment for years to come. Moreover, you get undivided responsibility for *all* your insulation requirements.

**1. You get dependable materials**—Johns-Manville manufactures a complete line of insulations for every service temperature from minus 400F to plus 3000F. From them your J-M Insulation Contractor can select the right insulation for the most dependable service on your job. To develop new and improved insulation materials Johns-Manville maintains the J-M Research Center—largest laboratory of its kind in the world.

**2. You get dependable engineering**—For 95 years Johns-Manville has been accumulating insulation engineering experience. J-M Insulation Engineers are called upon to solve insulation problems of every type and magnitude, in every industry. Since your J-M Insulation Contractor works closely with J-M Insulation Engineers, he brings to *every* job a high degree of training, skill and experience.

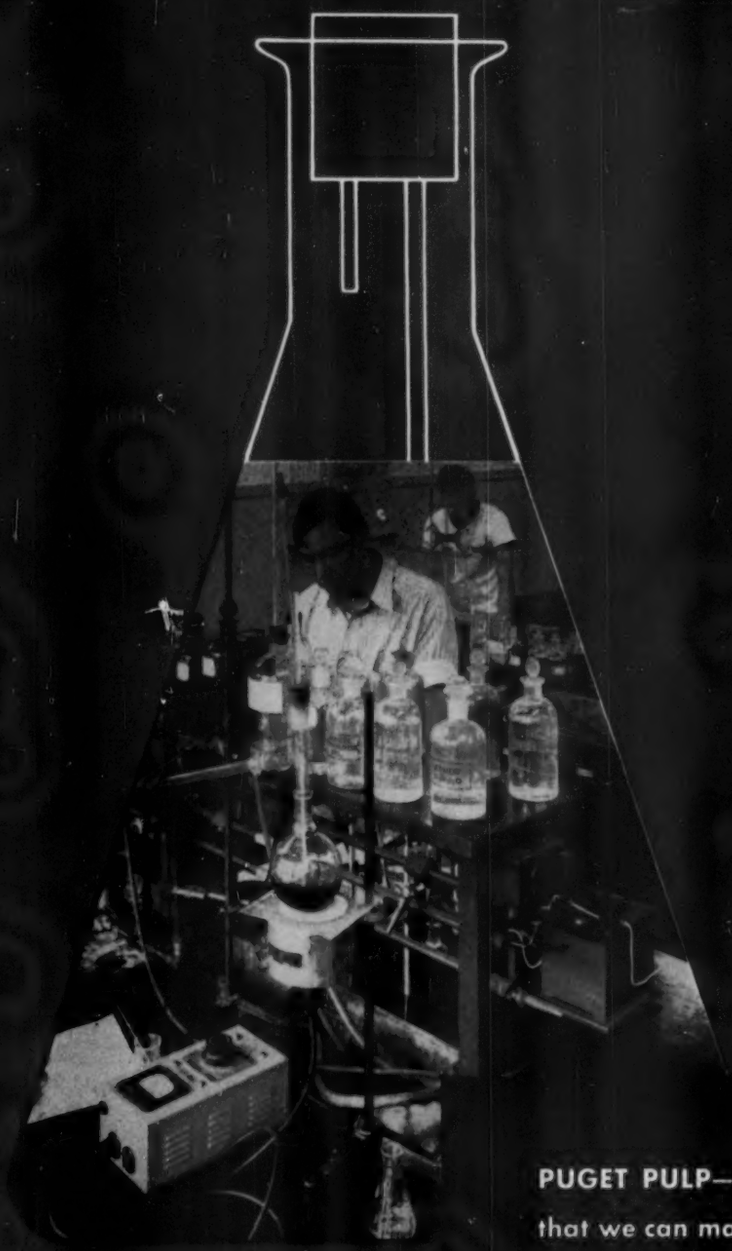
**3. You get dependable application**—Johns-Manville has set up a nationwide organization of J-M Insulation Contractors to serve you. These Contractors maintain staffs of insulation engineers as well as skilled mechanics thoroughly trained in J-M's proved application methods. You can have absolute confidence in their ability to apply J-M insulations correctly for trouble-free performance.

For further information and the name of your J-M Insulation Contractor, write Johns-Manville, Box 60, New York 16, N. Y. In Canada, 199 Bay St., Toronto 1, Ont.

*Reg. U. S. Pat. Off.

# Johns-Manville *FIRST IN* INSULATION

MATERIALS · ENGINEERING · APPLICATION



**PUGET PULP**—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***

# PUGET SOUND

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*for Fine Papers*

## *fastest to light, acid, alkali, chlorine*

When the ultimate in fastness is required—INDANTHRENES are eminently suited for tinting high grade papers manufactured from raw materials possessing a high degree of permanence.

Indanthrene Paper Blue RPZA Pdr.
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represent superior vat pigments which exhibit excellent fastness properties on all types of bleached pulps. Being water dispersible powders they may be added dry to the beater or used in stock solutions without danger of causing color specks.

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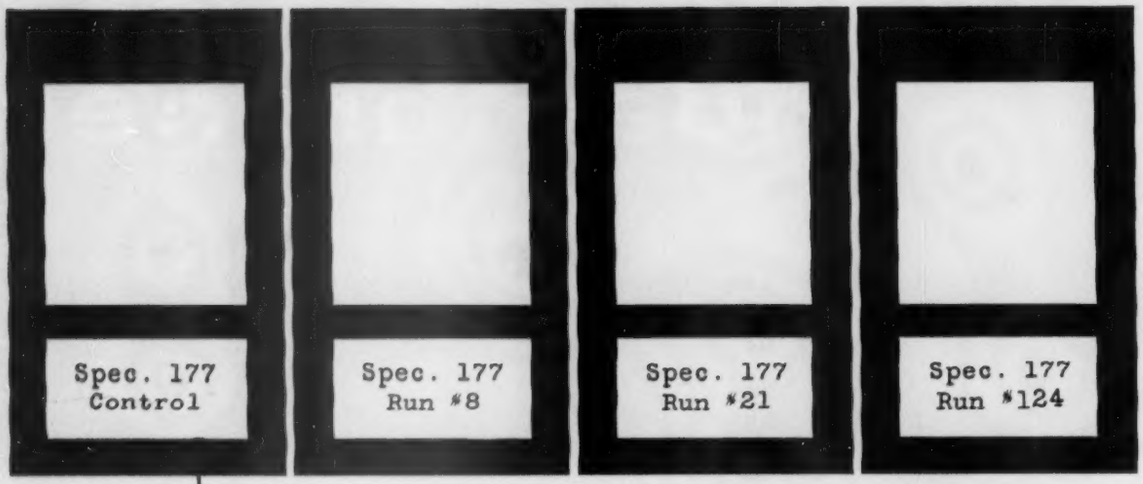



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# PRODUCT UNIFORMITY

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A competitively-priced board with a uniform, durable printing surface gets repeat orders. Eagle Brand Corn Starch assures you of an improved finish and a better printing surface, which will resist scuffing.

Paper men recommend Eagle Corn Starch (an acid-converted starch) for its ease of cooking, low cold water solubility and low viscosity.

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**BELOIT DIFFERENTIAL DRIVE** holds steady draws mechanically.

No belts to slip or motors to vary under changing power demands. Gears are of standard types, for simplified maintenance. Extremely exact adjustment of draws makes possible minimum strain on the sheet, thus reducing shrinkage in width, raising sheet tests, and sharply cutting machine breaks.—*Beloit Iron Works, Beloit, Wis.*

**BELOIT**

**PAPER MACHINERY**

*WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE!*

Griffith S.D.T. ROLLS

## RUBBER COVERED
# "Self-Doctoring Topress" Rolls
## by
# GRIFFITH of Portland

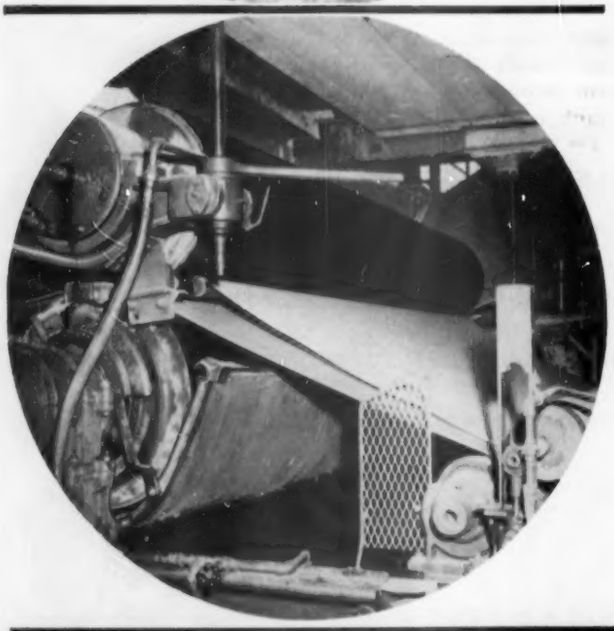
## Helps Port Angeles Increase Newsprint Production

- **2% BETTER WATER REMOVAL OUT OF FIRST PRESS**
- **400% LONGER FELT LIFE**

Crown Zellerbach's No. 2 News Machine at Port Angeles, Washington, is equipped with a Beloit Pick-Up Transfer. In over 100 hours of continuous operation (since last start-up) no breaks occurred at this press. Machine speed is in excess of 1,700 feet per minute.

The top roll is resilient GRIFFITH S.D.T. Three other Self-Doctoring Topress Rolls are running in this three-machine mill. (All were purchased separately from GRIFFITH at Portland.)

GRIFFITH S. D. T. Rolls are also running on Kraft and Sulphite machines in many positions from Lumpcrusher to Sizing Presses.



Bottom Suction Rolls are rubber covered and drilled by GRIFFITH at Portland.

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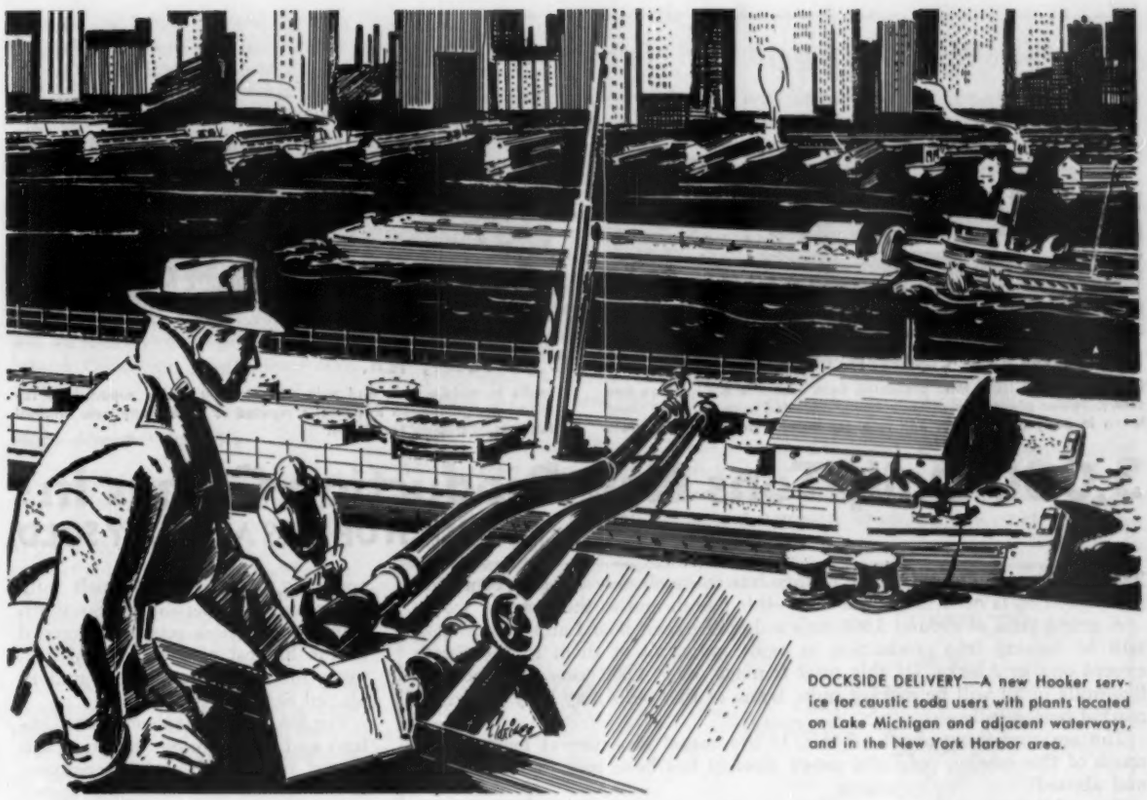

DOCKSIDE DELIVERY—A new Hooker service for caustic soda users with plants located on Lake Michigan and adjacent waterways, and in the New York Harbor area.

# For safe, sure, consistent results . . .
# STANDARDIZE on Hooker Caustic Soda

**Why this is important to you:**
With *uniform* caustic soda coming in, shipment after shipment, you can standardize your caustic handling and processing.

You need not adjust your process to meet variations in incoming caustic shipments. You can be sure each new shipment matches your current inventory.

You get this kind of uniformity with Hooker Caustic Soda. Every step in the manufacture—from salt brine to tank car—is controlled at Hooker, by Hooker. More than 20 separate inspections and analyses safeguard the uniformity of the Hooker Caustic you buy.

This is one reason why leaders in 30 industries specify *Hooker* Caustic—and why many have specified it for nearly 50 years.

Hooker uniformity can pay off for you, too—in lower operating costs and smoother, better processing. Try it and see. A letter or phone call to the nearest Hooker office will bring you product data and contract information.

**Buy the UNIFORMITY Hooker Caustic Soda gives you**

*Forms:* Liquid 50% and 73% • Flake • Solid • Special fine flakes

*Containers:* Tank cars • Tank wagons • Barges • Drums

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*From the Salt of the Earth*

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Please send ☐ data sheets on Hooker Caustic Soda; ☐ Bulletin 100 describing Hooker products and services.

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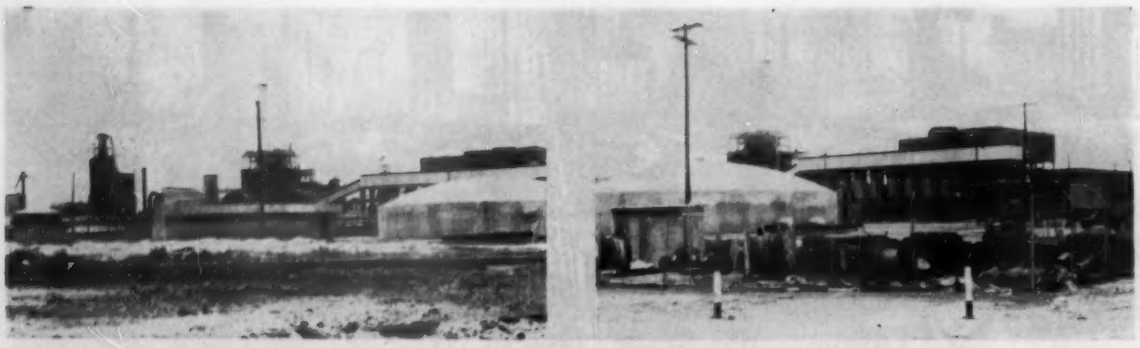


**FIRST VIEWS OF COMPLETE BUCKEYE CELLULOSE MILL AT FOLEY, FLA.**

**PANORAMA OF NEW MILL presented from east side are in these two views. Power plant was already being operated when pictures were taken in early May. Power and recovery installations at left, concrete tanks in middle area and pulp mill at right are of superficially familiar design though this mill is reputed to have many new original features, including recoveries.**

# 3,000 Daily Tons New Production Comes In!
## --MUCH OF IT IS ALREADY SOLD

SELDOM IN ALL pulp and paper history has so much new tonnage come into production as is occurring right now—this month and in the last few weeks.

A grand total of around 3,000 tons a day of paper, board and market pulp will be coming into production in eight mills, all of them in the South, except one in Alaska. Of this total tonnage, over 1,000 tons from possibly five mills in all will be market pulp. Some of this pulp may only be on the market periodically.

The amazing thing about all this, to the casual observer at least, is that much of this market pulp and paper already has been sold in this country and abroad!

Four of the new mills are so-called dissolving pulp mills (Ketchikan, Rayonier, Buckeye, Valentine). Some of their total production will also be for paper pulps, as well as high quality acetate and viscose pulps.

Over a month ago the power plants of the new Rayonier mill (275 tons design) at Jesup, Ga., and of the Buckeye Cellulose (300 tons) mill at Foley, Fla., were being operated. Rayonier expected to have the Jesup mill in complete operation about mid-June, as both mills raced to almost a "dead heat" in coming into production.

Even the Alaska mill raced right down to the "tape" in a virtual tie with Jesup and Foley. First cook at Ketchikan Pulp Co. at Ward Cove—first in Alaska history—was set for the weekend of May 16

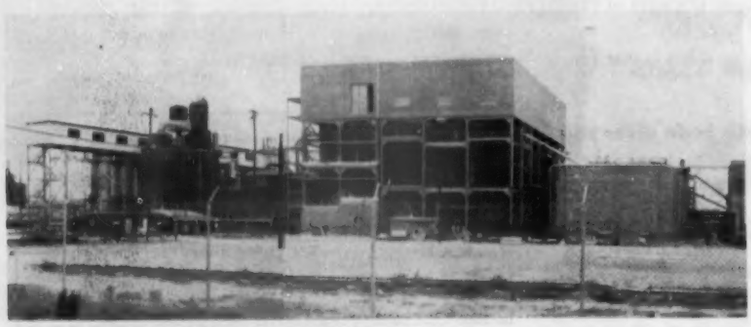
These three mills were many times linked in discussion and speculation, since all three were to be the newest mills in the dissolving field, but it had not been "in the cards" that they would be starting up so closely together.

### *Highest Cost Mill in History*

Also racing to a thrilling rendezvous with a May "deadline" was a spanking new bleached kraft pulp and newsprint operation in Southern Tennessee—which sets a new record as the highest cost investment in a new "first" pulp and paper mill in United States history.

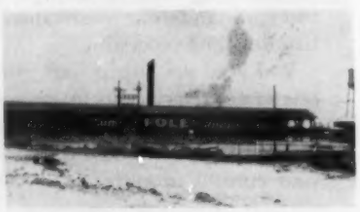
For $55,000,000 (tax certificate listing) and maybe more, the great and almost fabulous Bowaters company of London has built one of the "showplaces" of industry—the Bowaters Southern Paper Corp., at Calhoun, Tenn. Like the Foley project in Florida, this is a J. E. Sirrine Co. engineering project.

On the eve of its startup, Karl O. Elderkin, vice president and general manager, became ill and was confined at home for a while but was recovering very nicely, his friends were happy to hear. This mill will have two high-speed newsprint machines making 125,000 tons annually, reportedly all sold for years ahead. It will also make an additional 50,000 tons of market bleached kraft.



***BUCKEYE MILL FROM NORTH SIDE***

**THIS NEW PICTURE of completed Buckeye Mill at Foley, Fla., was taken at right angles from panorama shown elsewhere on this page. Viscose, acetate and paper pulps will be made here by this Procter & Gamble subsidiary and reputedly it has introduced unusual innovations in a specialized alkaline recovery process.**



***NAME OF FOLEY STILL THERE***

**FOLEY LUMBER INDUSTRIES is name still emblazoned on this lumber building on mill grounds of Buckeye Cellulose. Brooks-Scanlon-Foley interests (lumber in Oregon, Powell River Co. in British Columbia) sold their Florida timber and properties to Buckeye, after abandoning their own thoughts of going into pulp in the South.**

At St. Joe Paper Co., Port St. Joe, Fla., a big increase in paper production is effected with a new 700 ton (daily) machine and speedup of an older 400 ton machine to 600 tons.

Last word was that the new Rome Kraft Corp. mill, 600 ton linerboard mill on the Coosa River at Rome, Ga., was starting up in June. In anticipation, the generalissimo of this project, as he was of the big Macon Kraft mill preceding it, Capt. Herbert A. Kidd, has moved there. He left James A. May in charge at Macon as resident manager. Mead and Inland Container jointly own both mills.

### *More About Pulp Mills*

Resident managers through the long period of construction and now in charge of operations for Rayonier at Jesup and Buckeye at Foley are, respectively, Tom Stein and Paul Honey. Newly-named manager in Alaska is Vic Haner, former plant engineer at Puget Pulp in Bellingham, Wash.

The Alaska mill is the second in history of commercial size on a magnesia base sulfite recovery system—first was Weyerhaeuser in Longview six years ago. All the other new mills are, of course, on the alkaline side in a general way, but with some new refinements and specialties.

Buckeye's process has been called prehydrolized kraft, but that is reputedly only part of the story and this independent thinking and acting organization, with a long history of cellulose research in the Procter & Gamble organization, is said to have come up with some real novelties, as in new recoveries, for example.

As is well known, the Rayonier processes for its "purified cellulose" have long been specialties, and it is known that it is doing some new things at Jesup. It is not so well known that Rayonier actually has had many years experience in study of alkaline variations, because its four other older mills in Washington state and Florida are so well known as sulfite.

Incidentally, schools in Jesup, historically an agricultural town, have no chemistry courses. But they are going to start teaching it because of the new mill.

### *Other Additional Tonnage*

Other current additions to production in the South are on a smaller scale:

Southern Paperboard Corp., division of Robert Gair, at Port Wentworth, Ga., has started up a new

## Union Bag Is Now Biggest in the World

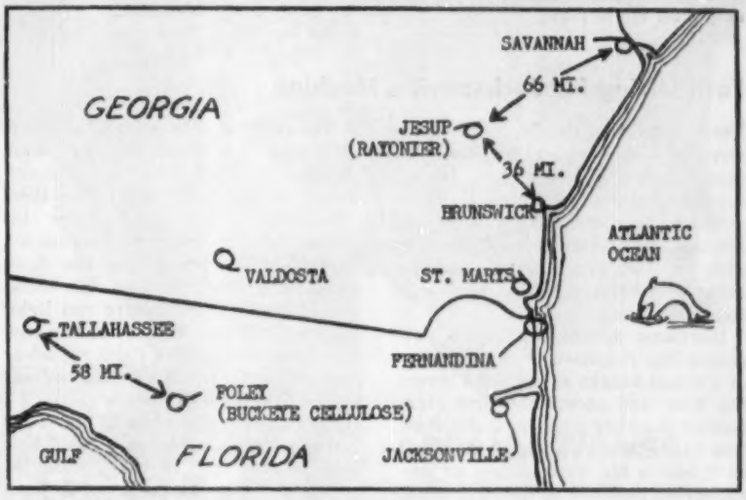
**WHILE ALL this new production was coming in, as reported on these pages, that great giant of the industry, Union Bag & Paper Corp., held a press conference in mid-May in connection with a regional Tappi meeting in Savannah, to announce completion of an expansion program making it the largest operation on one site in the world.**

**Gunnar Nicholson, exec v. p., flew down to Savannah from New York to tell the story. Resident Vice Pres. Tad Dunn and Public Relations Mgr. Kirk Sutlive assisted as hosts.**

**Union Bag's "B" program begun in 1953 brought its total production to over 2,000 tons per day, including 100 tons more of semi-chemical, and key unit is the new No. 6 Pusey & Jones 236-in. machine, which gives this mill identical Puseyjones "sextuplets" in its lineup of big machines.**

**Program "A" was completed in late 1953, when production was brought to1,750 tons daily. U. B. will be using over a million cords of wood per year!**

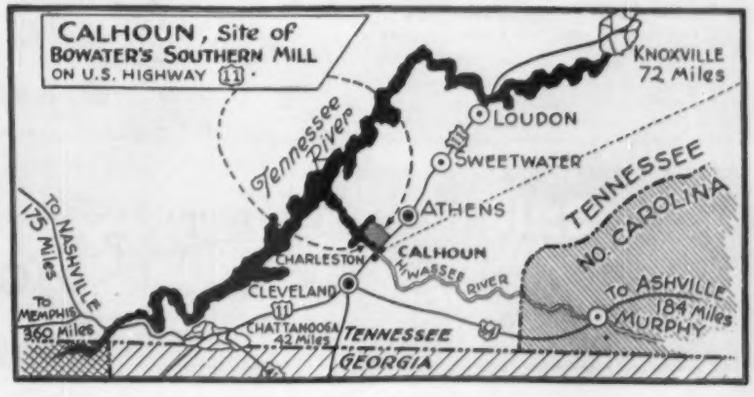
**New No. 5 and No. 6 General Electric turbines, a straight-line row of 34 digesters, some carbon brick, some Inconel and some stainless lined (to reveal a story some day on how to solve corrosion problems), a new Combustion Engineering boiler and a variety of alternative stock preparation systems give the "new look" to U.B.**




***MAPS SHOW SITES OF NEW SOUTHERN PULP MILLS***

**(At top) RELATIVE LOCATIONS of two new dissolving pulp mills in Georgia and Florida can be seen here. Rayonier's new mill at Jesup, Ga., and Buckeye Cellulose's new mill at Foley, Fla., had almost simultaneous startup dates. Note inland locations of newest mills (including NCC's at Valdosta—story and pix in April *PULP & PAPER*). Older mills are at tidewater—Savannah, Brunswick, St. Mary's, Fernandina and Jacksonville.**

**(Below) Map shows location of Bowater's new bleached kraft pulp and newsprint operation in southern Tennessee—the highest cost investment in a new "first" pulp and paper mill in U.S. history.**



high yield system which was expected to at least add 100 tons of production. And last word was Valentine Pulp & Paper, subsidiary of Valite, resins producer of New Orleans, was due to start a small bagasse mill presently at Lockport, La.

An interesting trend is to be noted in these newer mills—a trend to inland sites, away from tidewater. For example, Foley, Jesup, Calhoun and Rome. Valdosta was another example (see complete story with pictures in April PULP & PAPER). Jesup is the first of four Rayonier mills to be away from tidewater.

HERE IS A NEW PICTURE taken just a few weeks ago of St. Joe Paper Co., on Florida's Gulf coast, where a new Pusey & Jones 220-in. Fourdrinier and rebuild of an older machine has increased production by 900 tons daily (from 400 to 1300).

PAINTING OF NEWLY completed Jesup, Ga., mill of Rayonier Inc., presented to TOM R. STEIN (right), Resident Manager for Rayonier throughout construction and for operations. At left is A. P. SCHNYDER, one of Ebasco Services group which presented the art work done by Earl Bishop, Ebasco architect.

## Face Lifting for Jacksonville Machine

PRESS SECTION of the St. Regis Jacksonville Beloit paper machine recently had a complete face lifting, according to John K. Ferguson, resident manager, and John McDermott, general superintendent. A suction pick-up felt and inverse suction press have been added for more reasons than one.

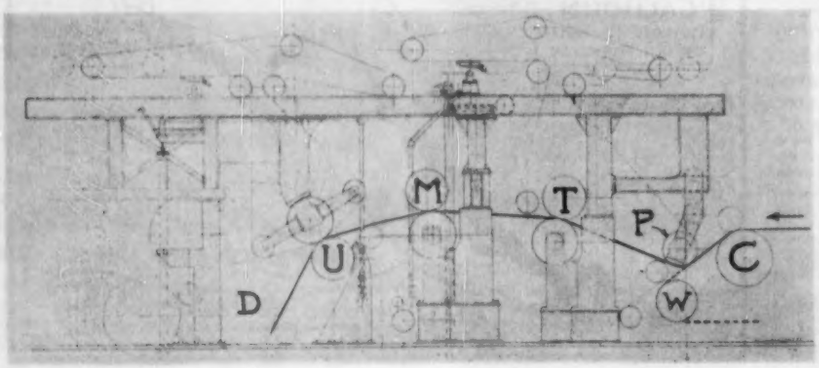
Increased speed in modern machines has emphasized the problem of wet end breaks as the sheet leaves the wire and enters the first press section. Another problem is the draw that has to be set up to pull the sheet as it leaves the wire, across an unsupported distance to the first press. The draw is accomplished by running the press faster than the wire; however, this leaves a permanent mark on the sheet in the form of stretch and shrinkage. This becomes a far greater problem on the lighter sheets, for it requires a strong, ductile sheet to withstand the forces set up by the draw.

The sheet at this point is between 80% and 85% water and has been drawn into the wire by vacuum boxes on the Fourdrinier. The then relatively fragile sheet must be pulled from the wire and across an unsupported distance to the first press. The elimination of this draw would make it possible to run light papers faster and with fewer wet end breaks as well as run lighter grades, heretofore economically unfeasible.

The first attempt used a wet pick-up felt to pick the sheet off the wire but this had the disadvantage of being limited to very lightweight sheets and the sheet picking up water from the wet felt. Several mechanical stages later, the suction pick-up felt developed, where a felt is lowered onto the wire by a suction roll which picks the sheet off the wire onto the felt which transfers it to a press; thus eliminating the necessity for a draw.

As described by Mr. McDermott, additional press capacity has been added by an inverse suction press. By inversing the suction press the suction acts on the upper side of the sheet, thus removing the lake of water which otherwise washes the fiber (disturbing the formation) and which, when carried through the press, crushes the sheet.

Beloit Iron Works designed and furnished the machinery including an H-12A Nash Vacuum pump on the pick up roll and a L-11A Nash vacuum pump on the inverse press. General Electric supplied drives.




Here's how it's done at St. Regis Mill! New suction pick-up roll at P lifts loosely mat fibers from the wire portion between C and W, and carried it on the underside of the felt to the transfer press at T. Since the suction is on the bottom roll at this point, the sheet adheres or is "transferred" to the bottom felt which carries it to the main press section at M. Suction rolls on the bottom remove water in these two presses. After leaving the main press the more compact, stronger sheet is subject to its first draw as it leaves the felt and enters the inverse press U and then to the first dryer D. The previous first and second presses were converted to the transfer press T and main press M.

## Southland to Add Newsprint Machine

Southland Paper Mills, Lufkin, Tex., has definitely decided to go ahead with addition of a third big Fourdrinier newsprint machine. It will be its fourth machine in all, with one on board, and this is one of the biggest new projects announced in the industry in 1954.

It now has a 235-in. Puseyjones and 238-in. Bagley & Sewall machine on newsprint.

## Powell River May Enter Kraft Pulp

Announcement by President Harold S. Foley that Powell River Co. has acquired a controlling interest in Martin Paper Products Ltd. of Winnipeg and will expand that company's operations into British Columbia by establishing a container plant in Vancouver was regarded in industry circles as foreshadowing entry of the big West Coast newsprint and sulfite pulp producer into the kraft pulp field.

Martin Paper Products was founded in 1929 and has plants at St. Boniface, Calgary and Edmonton, making 600 million sq. ft. of corrugated board annually.

Powell River's newsprint output this year will equal that of all Sweden, will double Norway's and be only slightly less than all newsprint manufactured in Soviet Russia.

# ONE BIRD VIBROTOR SCREEN *LEADS TO ANOTHER*

It invariably happens! A mill puts in one or two *Vibrotor* Screens with slotted plates on some routine pulp screening application. Its performance demonstrates its value and usefulness far better than anything we can say about it. Repeat orders keep coming in for all kinds of different screening jobs.

That's why we say *name that screening problem wherever it may be and whatever the stock.* All we want is the chance to show what the Vibrotor Screen can do about it.

## *APPLICATIONS?*

The Bird Vibrotor Screen delivers from 60 to 90 tons of hard kraft stock per day at 1.5% consistency

It delivers 60 to 80 tons of semi-chemical, using .018" cut screen plates

It handles 100 to 140 tons of deinked stocks per day at 1.1 to 2.0% consistency

It works like a charm in double dilution systems. Great, too, on defibrated stocks

It screens high density paper stocks, often at points where screens have never been used before

**BIRD**
**MACHINE COMPANY**
**SOUTH WALPOLE**
**MASSACHUSETTS**

### IDEA FOR THIS ARTICLE CAME OUT OF A MEETING IN SOUTH

HOWARD W. ALLEN, Vice Pres. of Johns-Manville Sales Corp., and Director of Public Relations, Johns-Manville Corp.

**Howard W. Allen, vice president of Johns-Manville Sales Corp. and director of public relations, Johns-Manville Corp., flew from New York to attend a pulp and paper industry community relations meeting held some months ago in the South.**

**In six mills in six states, coast to coast, J-M makes sulfate pulp, groundwood, asbestos paper, roofing, felt and board, so it is very much a part of this industry.**

**Mr. Allen told that paper industry meeting something about J-M's community programs, which his company had reviewed and revitalized in recent years.**

**It seemed like a good idea to tell J-M's story to the whole pulp and paper industry. So PULP & PAPER made further inquiries regarding the J-M program. Hence, this article.**

**Born in Washington, Ind., in 1902, Mr. Allen graduated from the University of Indiana and did p. g. work at Columbia. He is a past president of Sons of Indiana in New York. He worked his way through college as a musician and violin teacher and played his way on a tour of the Orient. After considerable experience in newspapers and public relations, he joined J-M in 1933. He became director of its public relations in 1945.**

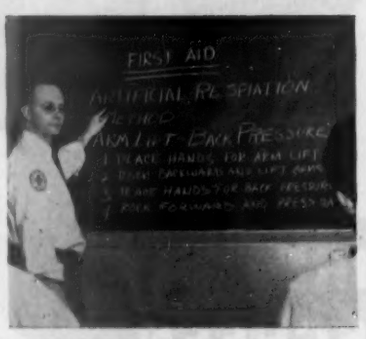
# How J-M Revitalized Its Community Relations

THE COMMUNITY in which a plant is located may account for only a tiny fraction of a company's total sales, but Johns-Manville's management believes home-town opinions about their company have a marked effect, favorable or unfavorable, on production, sales and, ultimately, profits.

Despite widespread operations—22 plant and mine locations in the U.S. and Canada and seven semi-autonomous divisions—Johns-Manville has kept its community relations objectives relatively simple and the principles of the program broadly applicable to all locations.

**FORESTER WITH A MOVIE**

**CARL HAMMARSTROM, Johns-Manville Forester, Natchez, Miss., plant (second from right, carrying case), takes forestry film for showing before Meadville, Miss., school. At left is School Principal W. Hankins and right, County Superintendent W. E. Boggan. Johns-Manville Foresters at Jarratt, Va., and Natchez insulating board plants, aid in teaching school groups good forestry practices.**




**ENGINEER TEACHES FIRST AID**

**GERALD FISHER, Draftsman at Johns-Manville's Waukegan, Ill. plant, holds evening first aid sessions for community groups under the auspices of American Red Cross. Mr. Fisher is a registered first aid instructor. Johns-Manville encourages plant personnel to participate in all community activities.**

Community relations was established as a recognized activity at Johns-Manville in 1937, with responsibility resting with the chairman of the board who is chief executive officer of the company. The public relations department, in addition to its primary responsibility of company-wide public relations, is charged with planning the community relations program and advising on specific phases of the activity, and reports to the chairman.

The community relations program is actually carried out, in most instances, by the industrial relations manager at each plant or mine location, who works closely with and reports to the local managers. Plant and mine management are well aware that it is just as much their job to demonstrate Johns-Manville's good community citizenship as it is to produce goods.

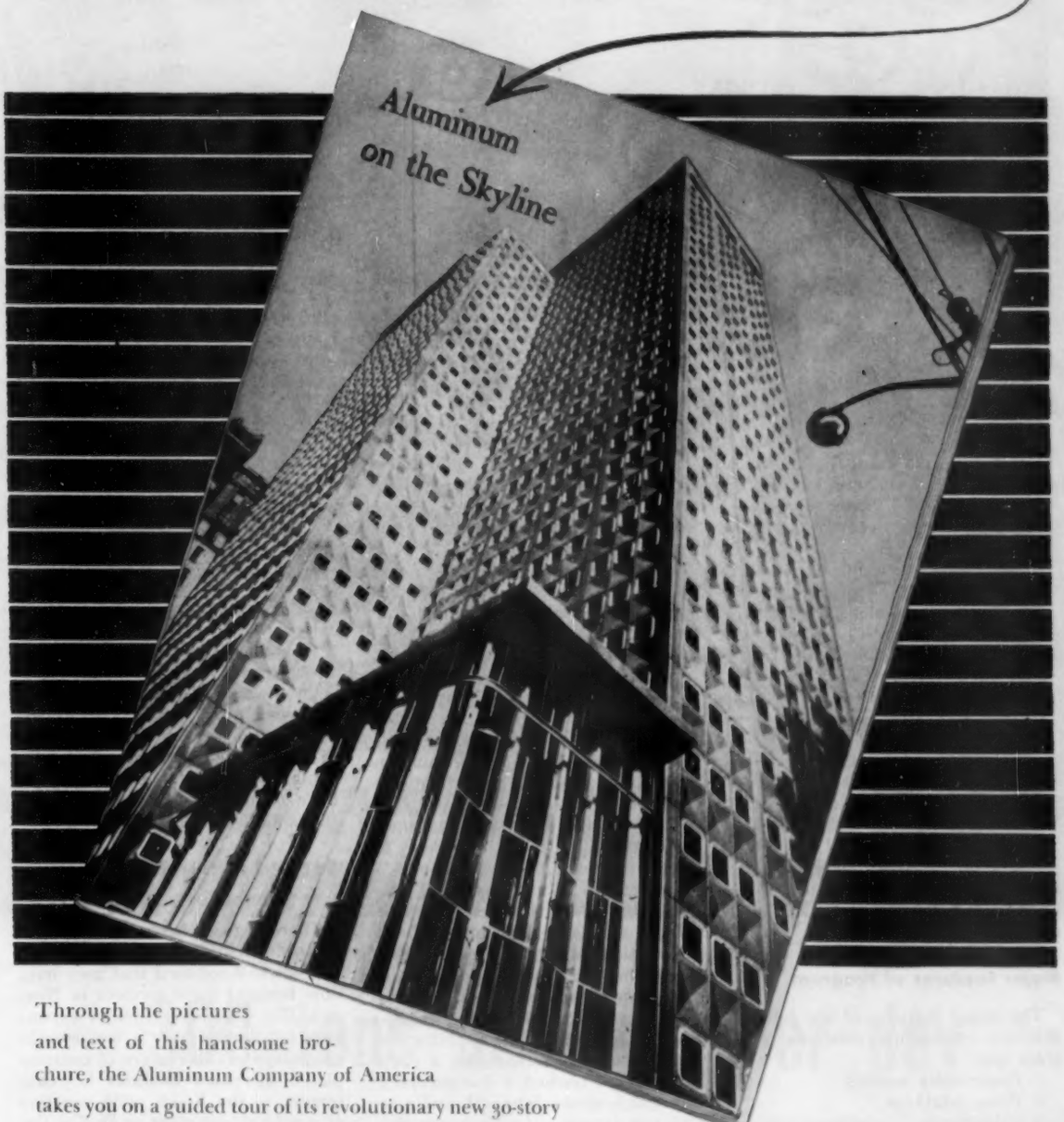
Control of the program and a measure of its accomplishment is maintained by quarterly progress reports from the plant managers. Significant items from these reports are summarized in the *J-M Community Relations Exchange*, issued quarterly, so that all J-M plants can mutually benefit from community relations activities or techniques which have proved successful. The *Exchange*, written and distributed by the public relations department, also serves as a vehicle to remind community relations planners of community opportunities afforded by specific dates or seasons of the year.

### Community Objectives

In 1947, the public relations department made an intensive survey and review of the company's community relations program and, on the basis of the findings, launched a revitalized and coordinated community relations program. This was designed to:

1. Create an atmosphere encour-

# How Brown Company Pulps Helped Put...




Through the pictures and text of this handsome brochure, the Aluminum Company of America takes you on a guided tour of its revolutionary new 30-story building in Pittsburgh—the first aluminum skyscraper in America.

Beautifully printed and illustrated, the pages of "Aluminum on the Skyline" are produced on fine papers made by the Mohawk Paper Mills—from pulps carefully engineered by Brown Company to provide the finest, clearest, most faithful reproduction possible.

Coming up with the *right* pulps for countless catalogs and brochures like this one for Alcoa is a job our Technical Service Division has been doing for discriminating corporations for many years. If you have a paper problem of this kind—or any kind—perhaps we can help you, too. Write to Dept. CP 6 in our Boston office.

BROWN

QUALITY

COMPANY, Berlin, New Hampshire
CORPORATION, La Tuque, Quebec

*General Sales Offices:*

150 Causeway Street, Boston 14, Mass.
Dominion Square Bldg., Montreal, Quebec

SOLKA & CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC KOWTOWLS NIBROC TOILET TISSUE • BERMICO SEWER PIPE, CONDUIT & CORES • ONCO INSOLES • CHEMICALS


**PIONEERED NEWSPAPER ADS**

**JOHNS-MANVILLE was one of the companies that pioneered newspaper advertising to acquaint mill towns with company policies and objectives. Here are some samples.**

aging: a. Increased production at lower cost; b. Improved employe morale.

2. Cultivate an informed public opinion: a. To win community backing in stabilization of employe relations; b. To support J-M's position in times of controversies such as strikes or threatened strikes; c. To uphold J-M's views in discussions of joint plant community civic problems.

3. Acquaint thought leaders in community with basic economic factors which enable J-M: a. To give economic support to community through payrolls, taxes, contributions, local purchases, etc.; b. To provide jobs; c. To supply needed products and services; d. To earn reasonable profit.

4. Demonstrate by favorable actions of J-M: a. Importance of free enterprise system; b. Necessity for its preservation.

5. Stimulate interest of members of community: a. To seek job opportunities at J-M; b. To buy J-M products; c. To invest in J-M securities.

### *Major Features of Program*

The major features of the Johns-Manville community relations program are:

1. Community mailing.
2. Press relations.
3. Plant visits.
4. Community advertising.
5. Cooperation with clergy and teachers.
6. Appearance of J-M representatives and showing of motion pictures before community groups.

In order to help J-M plants to do their community relations jobs, the public relations department has prepared a number of aids. They include an 89-page *Johns-Manville Guide for Plant Visits*, containing detailed information on everything pertaining to conducting a plant visit for community groups; a *Press Relations* manual, stressing the need and methods for keeping each community completely informed about company plans, operations and local plant activities; a *Johns-Manville Speakers' Handbook*, containing basic talks on Johns-Manville, on the nation's economy and on pertinent public issues.

These aids establish basic company policies in the fields they cover and help local managers plan many of their community relations activities so that the maximum benefit to the company is derived from each effort.

The community advertising and community mailings regularly scheduled by Johns-Manville at each location are designed to supplement the flow of information about the company and about the American business enterprise system which the community receives through other local channels of communication.

In addition, a central motion picture library is maintained by the public relations department from which plant and mine locations can draw films for local showing about the company and its operations and about economic topics of general interest. Each J-M plant and mine location also has permanently a copy of *Fibre of Freedom*, a documentary film which shows Johns-Manville as a typical example of an industry operating in the American free enterprise system. The film was produced by the public relations department.

While certain activities have been established as basic to the Johns-Manville community relations program, it is designed to be completely flexible and can be tailored to the individual needs of each community. Each J-M location adapts the broad program to meet local conditions.

The kind of community relations program Johns-Manville carries out is one which emphasizes steady planning and implementation rather than "special" events, although these, too, are utilized as occasion indicates their usefulness.

Of course, all aspects of the program are employed in addition to constant participation in community affairs in which all members of the J-M organization are encouraged to take an active part.

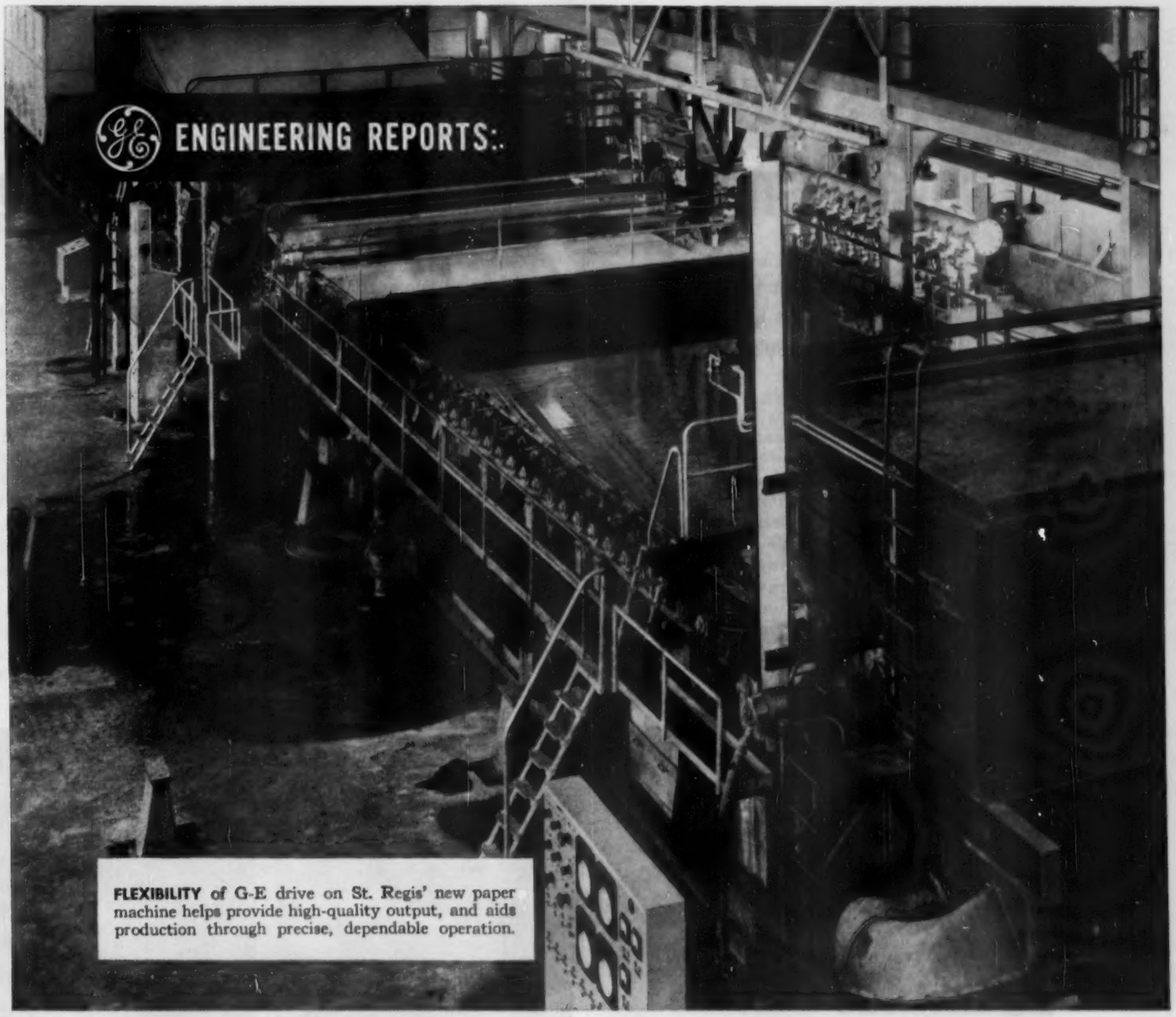
Company executives in charge of this program emphasize that Johns-Manville seeks the understanding of each community in which it operates by a day-to-day demonstration of the company's interest in the community and its sincere desire to be a good citizen in and friend of the community.

## Second Major Expansion For Stowe-Woodward

There's good news for Midwest papermakers in the announcement by Stowe-Woodward that they have now brought their services to Neenah, Wis. This second major expansion follows by only a few months the company's disclosure of contemplated increased facilities for customers in the South, with erection of a rubber roll plant at Griffin, Ga.

Best features of the move to Neenah are the elimination of shipping delays between the main plant at Newton Upper Falls and substantial freight savings to papermakers in the Midwest.

Lease arrangements with J. W. Hewitt Machine Co. provide manufacturing, laboratory and office space for rubber roll production. The plant is served by a spur track of Chicago Northwestern R.R. and also has facilities for direct loading and unloading by trucks.




**FLEXIBILITY** of G-E drive on St. Regis' new paper machine helps provide high-quality output, and aids production through precise, dependable operation.

**St. Regis' new 230-in. Beloit, powered by G-E sectional drive, produces . . .**

# 300 tons of paper per day

Since 1945, demand for kraft paper has skyrocketed. Bidding for a bigger share of the expanding market, the St. Regis Paper Co. is depending on this giant Beloit fourdrinier machine located at their new, full-integrated mill at Jacksonville, Fla. Already, it has produced over 100,000 tons of kraft.

In operation only a year, the new machine has shown its versatility by turning out everything from 24-pound paper to 24-point board, to a wide variety of specifications. Operating speeds have exceeded 1900 feet per minute.

**Modern drive system**—Paper machine flexibility makes top-speed output like this possible at the Jacksonville plant. It is also the reason why paper and board uniformity and quality can be kept high, even with broad product diversification.

To provide the machine flexibility they needed, St. Regis had a modern General Electric multiple-generator sectional drive installed on their fourdrinier machine. With this electronically controlled system, machine operators can hold paper speeds and tensions precisely over a wide range of settings—and turn out a high rate of top-quality production, with minimum downtime.

**Electrically co-ordinated**—This machine is part of a completely integrated mill. The electrical system was engineered as a unit, from wood-yard to finishing room by a team of G-E specialists working with the customers' staff and consulting engineers.

The next two pages show you a picture-story of what they did.

***How G-E engineering teamwork helped plan a better mill***

GENERAL ELECTRIC

# Here's how G-E engineering services saved time, work and money for St. Regis

**Co-ordinated manufacture and installation of G-E equipment helped St. Regis build one of the country's most modern mills.**

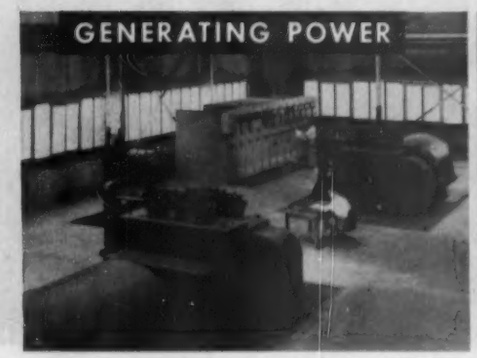
**Co-ordination** made a success out of the electrical system at St. Regis' new kraft mill at Jacksonville. It simplified the earliest conferences, smoothed out equipment planning and installation, helped meet start-up dates. Through co-ordination, a team of General Electric engineering specialists were able to help St. Regis and the consulting engineers design the entire mill's electrical system as a unit. It was a big job—but it saved time, money, and engineering man-hours for St. Regis.

G-E Power Engineer W. C. Bloomquist

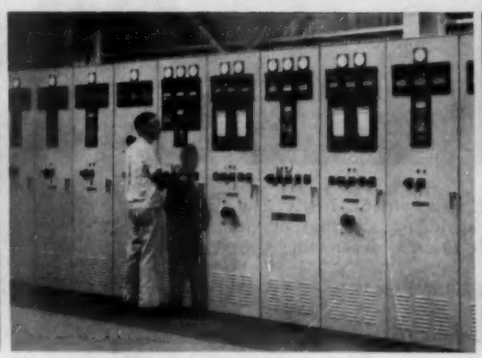
**Engineering help started early**—Sales and application engineers on the G-E team were asked, in the planning stage, to make recommendations for the entire system. They conferred with St. Regis plant engineers, and later, worked closely with their consultants, Alvin H. Johnson & Co. Engineers, and with representatives from prime contractor.

**G-E "team" follows through**—The rest of the G-E engineering team was called into action. The project co-ordinator at Schenectady, N. Y., responsible for engineering, production, and shipment co-ordination, scheduled the construction and shipping dates of all apparatus. G-E product specialists helped work out the detailed designs needed for special equipment. Because of this, St.

G-E Application Engineer G. E. Shaad

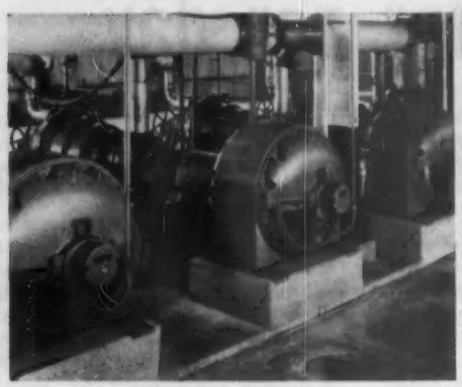



**1** **POWER** for entire mill is generated by two 6000-kw G-E turbine-generators from available process steam.

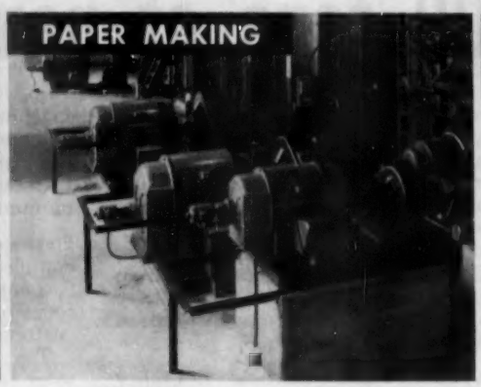


**2** **FACTORY ASSEMBLY** of this turbine room 4160-V G-E switchgear helped cut installation costs.


**3** **RUGGED** G-E motors drive two 45-ft. barking drums helping to keep raw material movement high.



**7** **HIGH EFFICIENCY** at low cost is provided by G-E 400-hp synchronous motors powering Jordans.




**8** **FLEXIBLE** sectional drive for paper machine is all G-E powered, helps assure greater production continuity.

**9** **CONVENIENT, COMPACT** G-E control for wet end of 230-in. paper machine is located in one room.

Regis engineers and the consultants were relieved of a great deal of time-consuming correspondence and details, allowing them more time for the larger aspects of the project. Orders went out from Schenectady to key G-E plants throughout the country—to Fort Wayne, Indiana; to Pittsfield and West Lynn in Massachusetts; to Philadelphia and San Jose, Calif.

Co-ordination was just as vital during equipment construction as it was during first planning. It paid off the same way. For instance, the construction of operator's control panels for the paper machine was carried out in Wisconsin near the machine builder to assure integrated control of the machine.

**Start-up aided by co-ordinated service**—Deliveries to Jacksonville were rigidly scheduled. Equipment arrived on site at St. Regis when needed for actual construction. Progress reports, issued at frequent intervals by the G-E team, kept St. Regis' receiving, operating, accounting and expediting personnel up to date.

G-E Sales Engineers (l. to r.) D. P. Richardson, R. E. Griggs and H. L. Smith

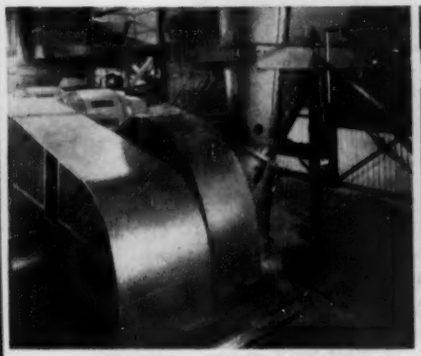
On hand during equipment installation, G-E field engineers were able to simplify the job of getting the new mill into production. They passed operating and maintenance information on to plant personnel. And at start-up time, their services helped St. Regis go into full-scale operation. The new Jacksonville mill made its first sheet of paper December 31, 1952. The dependable G-E electrical system, controlling 25,985 horsepower, has been giving St. Regis top performance ever since. 655-15

**YOU CAN GET THE SAME HELP**

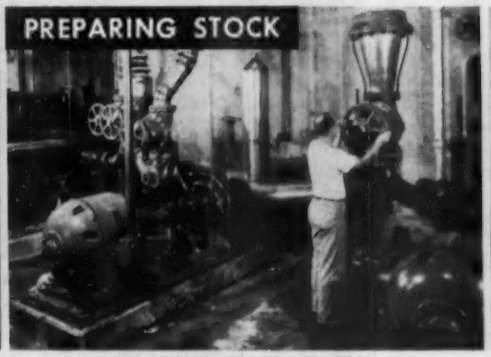
**Your job of getting a new or a modernized mill completed on time can be simplified. Call in your local G-E Sales Representatives early in your plans. Let him give you the complete story on the way a G-E Apparatus Sales Division team can work with your plant and consulting engineers to expedite your new project. General Electric Company, Schenectady 5, N.Y.**

## Engineered Electrical Systems for Paper Mills

# GENERAL ELECTRIC

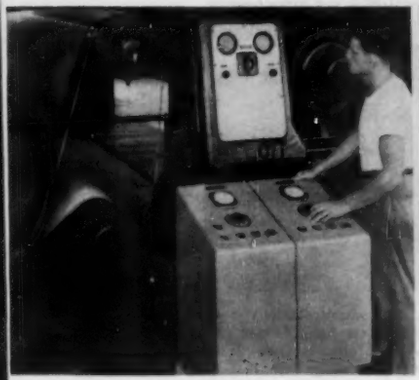


**4 RELIABLE** G-E motors driving 88-in. 10-knife chippers help reduce logs to 5/8 in. chips quickly.



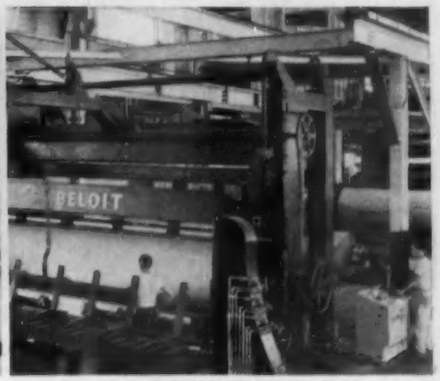

**5 CONSTANT STOCK FLOW** is responsibility of G-E pump motors located below paper machine room.

**6 FOR MORE ROOM** in work area, G-E limitamp control is located out of the way on this balcony.



**10 PRECISE CONTROL** from G-E operator's console means increased output of quality kraft at St. Regis mill.


**11 EASY THREADING,** higher winding speeds are possible with G-E motors and amplidyne control.




**12 FAST ACCELERATION,** deceleration provided by G-E motor helps increase slitter and rewinder output.

BILL CRUTE (at center) was interrupted at this point when he started to introduce Champion's Reuben Robertson Jr. at Pasadena (Tex.) Rotary Club luncheon. At left, Jack Anderson, Rotary Club President. At right, group of principals in the "This is Your Life" program staged for Bill Crute; left to right: REUBEN B. ROBERTSON SR., Champion's Chairman; Mrs. Crute; GLENN SMATHERS, Gen. Pulp Mill Supt.; and H. E. PAINE.

# Was Bill Crute Ever So Surprised!

"FOXED" FOR FIRST TIME in many a year, W. R. Crute, vice president of Champion Paper & Fibre Co., had a program blow back into his face at a Pasadena, Tex., Rotary Club luncheon when he began to introduce Reuben Robertson Jr. at what turned out to be a "Bill Crute" Day.

Rotary ostensibly had planned a big event with special guests for the occasion for which Mr. Crute was prevailed upon to induce the Champion president to be the speaker. As the company had been large and helpful during almost 18 years' operation there, the scheduling seemed natural enough. Mr. Crute, of course, would introduce the speaker.

When he took to the "mike" to introduce Mr. Robertson he was interrupted by Val Jean McCoy, master of ceremonies: "There's some mistake here," he cried, "we're introducing the wrong man."

Then one by one outstanding civic and business leaders paid glowing tribute to the man who directed construction of the big mill back in 1936 and remained to work shoulder to shoulder with others in building up the Pasadena community.

Pasadena is part of a highly industrialized area contiguous to Houston's ship channel. Some 200 persons participated in the event, itself the second ever accorded a "man of the hour."

Mr. Crute joined Champion in 1917. He was sent to Texas in 1936 to design and direct construction of the Pasadena mill which he subsequently managed. During the intervening period the mill's payroll rose from 350 persons to 1750.

# Holley-Edwards Is Reorganized

ROBERT H. EDWARDS has become president, and has taken entire control of Holley-Edwards Sales, Inc., of Jacksonville, Fla., one of the leading supply companies and distributors for pulp and paper and other industries of the Southeast.

Mr. Edwards had been vice president and a stockholder in the firm which was established in 1946 and will continue under the same name. The company serves about a score of pulp and paper mills in the Southeast, including some of the largest in the world.

Holley-Edwards has a staff of 22 salesmen and other employes; offers a 24 hr. day service from its headquarters and warehouse at 1738 East Adams (P. O. Box 4818) in Jacksonville. From a standing start, it has grown to gross over a million dollars a year. It represents a long list of manufacturers and carries or promptly provides tools, machine shop equipment, piping supplies, instrumentation and other equipment and materials for mills.

"We are very optimistic about the industrial future of the Southeast and especially of the pulp and paper

BOB EDWARDS, new President of Holley-Edwards Sales, Inc., New York City.

mills," Mr. Edwards told PULP & PAPER a few weeks ago.

University of Florida recently brought him to its campus to talk to students on opportunities for careers in the distribution field.

Mr. Edwards is the son of Albert H. Edwards, also of Jacksonville, who is vice president and assistant secretary of National Container Corp. Bob Edwards was born in New York City, graduated from N.Y.U., served in the army five years and did tax work and planned estates in New York before moving South.

## Second Plant for Coast

Marathon Corp. will build a new converting plant at Modesto, Calif.—second one in Far West for it in recent years. The other is at Sunnyside, Wash. The new plant, 90 mi. southeast of San Francisco, will make packages for food processers.

***THEY WILL DIRECT AND OPERATE EAST TEXAS MILL***

Top resident personnel for East Texas Pulp & Paper Co. mill at Evadale, Tex., scheduled for completion late in 1954 includes 11 posts, (l to r): R. M. (MIKE) BUCKLEY, Exec. Vice Pres. and Gen. Mgr., formerly with Soundview; A. G. (BUFF) NATWICK, Res. Mgr., formerly with Crown Zellerbach; JOHN S. HARTMAN, Plant Engr., formerly with KVP; JOE DUNN, Paper Mill Supt., formerly with Potlatch; CLYDE E. COLE, Controller, formerly with Univ. of Houston; LEONARD C. MENIUS, Personnel Director, formerly with Union Bag; FARLEY M. BOWERS, Prod. Scheduling and order servicing, formerly with Kieckhefer Container; E. R. COLLINS, Traffic Mgr., formerly with Port of Lake Charles (La.); BARNEY McMAHON, Wood Supt., formerly with Calcasieu. Not shown are CLARKE MORIAN JR., Gen. Sales Mgr., formerly with Hollingsworth & Whitney; and RAY BROWN, Pulp Mill Supt., formerly with Crown Zellerbach.

# Appleton Twins For Dual Economy

A new Appleton supercalender to increase production.
A modern Appleton rewinder for more speed. Team them up for *twice* the efficiency to cope with today's higher costs.

Appleton supercalender illustrated: 150" 12 roll, has shaftless unwind arrangement and automatic roll handling from elevated storage platform. Operates at 1800 f.p.m.

Appleton rewinder illustrated: 150" 2 drum, also ruggedly built, with low center of gravity to assure vibration-free operation. Operates at 3500 f.p.m.

**APPLETON MACHINE COMPANY**
APPLETON WISCONSIN

CUSTOM BUILDERS OF PULP, PAPER & TEXTILE MACHINERY · CALENDERS · FINISHING ROLLS · REWINDERS · SCREENS · DECKERS

NOW ON THE *BIG* **CASE** DIESEL

THE HARRISON *LOADER CRANE*

Here's a time-beating combination—the new Case "520" Tractor with hydraulic Power Steering . . . 6-cylinder engine that starts on diesel . . . single plunger injection pump . . . 6-point protection to assure clean fuel, and "Powrcel" controlled combustion for smooth, quiet lugging.

The powerful Harrison Loader Crane on 18-26, 10-ply tires takes you anywhere a truck will go. Gives you positive operation with Vickers hydraulic controls, valves and pumps. Has automatic counterweight to reduce rocking under load . . . hinge-type booms that reach easily for far-side loading of gondolas. Complete weight about 24,000 lbs.


***For more information write or call—***

**HARRISON MANUFACTURING CO.**

**Dept. A, P. O. Box 682, Columbia, South Carolina. Phone 2-9510**

# Weight Scaling Proves Best for Both Mill and Producer

**By J. W. McSwiney**

**Assistant Secretary-Treasurer, Brunswick Pulp & Paper Co.**

J. W. McSWINEY— " . . . other companies weren't satisfied; so Brunswick rechecked . . . "

In 1946 Brunswick received about 27% of its wood supply by truck, much less than was desired. Also more than the usual number of grumbles were being received—mostly with regard to scaling. As a step to increase the percentage of truck pulpwood, a weight scale was installed. This would, it was believed, cut down on the turn-around time of the delivering trucks on the yard. Therefore, scale weighing began at Brunswick largely as a means of increasing truck shipments and not as a means of improving wood preparation, quality or yield.

Truck wood was received from within a range of about 30 miles. It was fairly easy to weigh sufficient samples to develop an average weigh per unit of wood delivered. The range in differences in weight, that is from maximum to minimum, was in the neighborhood of 800 lbs. varying from a low of 6500 to a high of about 7300 lbs. per unit. Surprisingly, there was little difference in the weight per unit of hardwood or pine pulpwood. The higher hardwood density was offset seemingly by greater voids.

Truck wood receipts today total about 40% of total wood usage. A portion of the increased percentage of truck wood is attributable to weight scaling. All truck wood has been scaled by weight since the first day of the program. It should be emphasized that all weighing experience has been on truck wood harvested within a radius of 30 to 40 miles of the mill. Weighing of rail shipments in small quantities to determine the possibilities of expanding weighing facilities to rail shipments is now being considered.

### *Other Companies Dissatisfied*

Inquiries about wood scaling by weight and the inability of other companies to satisfy themselves that scale weighing was comparable to volume scaling prompted Brunswick to recheck the program. It was felt that the program must provide a fair and consistent measurement for the producer and the company alike. Too high scaling by weighing would be unfair to Brunswick, to competition and vice versa.

In order to find out the real score, a forestry graduate was put on a program called *"Solid Content of Wood Study."* Such a study, it was thought, would reveal the true value of scaling by weight and volume scaling. Many previous inquiries by the company, in an effort to determine what the solid content of a unit of pulpwood in the Southeast should be, bore little fruit.

Few people contacted had more than a hazy idea as to what the solid content was or should be. To Brunswick, it seemed that a raw material which ranged from 25 to 40 of the total cost of the finished product should be as much of a known factor as possible.

There was, of course, the usual question—"What do you do with the information after you have it?" Brunswick produces a high grade bleached sulfate pulp. Because of the bleaching operation, an exact yield is a bit hard to determine. A knowledge of the solid content of wood receipts should enable the mill to a degree to differentiate between mill factors affecting wood consumption and the quantity and quality of wood delivered to the mill.

The first job of the forestry graduate was to study the then-current methods of volume scaling and to either approve this method or make recommendations for changing it. His study showed that volume scaling was in total within about 1% of accurate for the volume received, but that there were fairly wide swings in the scaling of individual cars. Also, volume scaling, in order to be accurate, made allowances for certain methods of stacking. A different method of stacking might increase the solid volume per cubic foot of space. Recommendations were made and adopted for the elimination of these swings in individual cars and the changes have greatly improved the uniformity of volume scaling (used for all rail cars).

Having moved through this first step, the *"solid content study"* was now in order. The program was set up to determine the solid content of pine and gum pulpwood by rack cars, box cars and truck deliveries. The study indicated that rack cars

### *VERSATILE HYDRAULIC HOIST FOR TRUCKS, TRACTORS*


**New hydraulic hoist, reported to lift and swing from 1000 to 2000 lb., pull up to 5000 lb., snake, drag, dig and dump, is being marketed by Versatile Hydraulic Crane Co., 1444 University Ave., San Diego, Calif.**

**Designed for use on trucks and tractors, hoist is powered by single-speed takeoff unit from truck or tractor engine. Boom comes in two sizes, adjustable to lengths of 3 ft., 10 in.; 8 ft., 3 in.; and 11 ft., 8 in.**

**Further information may be obtained from the company.**

contained the lowest solid content per unit of any wood received in the mill. The butt ends of the sticks are heavier, larger and more difficult to place on cars. The easiest way to place them on the car is to put them on the outside of the rack car. As the butt ends on the trucks and the box cars are interlaced, an even stacking is achieved. The opposite of this is desired for rail cars to keep the sticks from falling off.

The study indicates that Brunswick is getting higher solid content from trucks and box rail wood than from rail rack wood. The cost of unloading box cars is more, therefore, it is still more attractive to use and insist upon rack cars. Experience with truck deliveries indicates that weight scaling would eventually tend to bring the solid content of rack cars more in line with truck and box shipments if a satisfactory unit weight could be worked out.

Another interesting factor—since inaugurating the *"solid content study,"* the yield on pine wood has increased 5% and on hardwood 4%. This should not be misunderstood. No claim is made that the *"solid content of wood study"* has increased our yield by the amount outlined. Gains have been made in the mill itself, but a substantial portion of the gain is attributed to the increased knowledge about density and volume of wood.

### Two Functions of Scaling

Any wood scaling program has two distinct functions:

(1) As a volume measurement for payment.

(2) Inspection to cull wood that does not meet specifications.

Both vitally affect wood quality and yields. If yield figures based on mill experience are to be of value, then an accurate measurement of the volume of wood received must be made available. The value of an accurate, consistent scale is increased when the attitude of wood producers is considered. A producer is more apt to take extra precaution in preparing his wood and in eliminating culls if he is consistently given a fair and uniform scale.

Inspection of wood is also important in improving wood quality. Culling wood that is sub-standard and deducting its value from the producer's check will discourage future shipments of such wood. A positive approach, however, is to encourage shipment of good wood.

Weight scaling has an advantage on these two points over volume scaling. The unit of measure in volume scaling is rather crude and actually tells very little about the wood, in quantity or quality. A volume of wood called a unit contains bark, solid wood, defects and air space. Little was known until recently as to how much of each was being received or how much of each should be received. The study indicates that the actual solid wood content of a unit varies as much as 40 to 80%. And yet it was possible for each producer to receive the same amount of money.

Until the producer is shown that he will derive monetary dividends from improvement in preparation and solid content per unit, he will not be too anxious to put forth extra effort in that direction. What is needed, then, is a system of scaling that will reward producers for well prepared loads of good wood.

Herein lies the advantage of scaling by weight over conventional methods. Once the proper conversion factor has been established, most of the human element is removed, making for more accurate and consistent scaling. The one drawback to weight scaling is that the conversion factors used are necessarily based on averages. Over the last six to eight years, the average of 7100 lbs. per unit used for truck wood within a vicinity of 30 to 40 miles of Brunswick has proven fair to the producer and to the mill.

It is believed that if wood can be purchased within a 30 to 40 mile radius of the mill on a weight basis, weights can be established that will be applicable to various shipping points. It will require an educational program, but over a period of time it should be accomplished. It will be to the best interests of the wood producer and the industry.

### Advantages of Weighing

The weighing of wood seems to offer these possibilities in improving quality and yield of pulpwood:

(1) Weight scaling discourages poorly prepared low yield loads. Since these loads weigh little, the producer's yield per load delivered to the mill is reduced. By weight scaling the producer is rewarded for every additional pound put on his truck.

(2) Weight scaling decreases the trucker's time on the mill yard which enables him to make more loads per day, thus lowering his overhead.

(3) It improves productivity of the truck wood producer in that it eliminates a man in his logging operations required to mark stick lengths. This, however, would not be true in rack car shipments because the longer stick would be a shipping hazard.

(4) Weight scaling puts wood buying on a more business-like basis. The producer receives the weight slip when he leaves the mill and knows day by day what each load of wood brings and he is able to see immediately what an extra stick of wood on a truck means.

### Summary—

(1) Truck wood contains a higher solid content per unit than rack cars. As a result, either truckers or rack car shippers are being discriminated against in pay.

(2) Since inaugurating a weighing program, the content of a volume scale unit of truck wood has increased about 300 lbs., proving to our satisfaction that wood producers will improve wood preparation when there is an incentive.

(3) Weight scaling offers an incentive to the producer that divides the advantage fairly between producer and mill. Each benefit to the mill is matched by a benefit to the producer.

(4) By constant attention to scaling, either by volume or weighing, wood preparation and yield are increased.

(5) By concentrated effort, the advantages of scaling by weight should, over a long period of time, be accomplished on rail rack car shipments.

*(An address given at Southeast APA meeting in Durham, N.C., in* 1953.)

**GAL CRANE OPERATOR**

**G. E. SEAVOY, Whiting Corp. Vice Pres. in charge of sales, shows MISS JO DILEO, Whiting employee, that feminine touch is more than enough for fast, precise handling of heavy tonnage loads on Whiting cranes equipped with the new Selectodyne control. Selectodyne (operated by lever at right) provides greatly increased versatility with 11 speed points in each direction instead of conventional five.**

## PULPWOOD SECTION

### Concentration Yards Serve in South

TRENDS IN pulpwood production equipment were revealed by mill-supplying dealers who attended a recent Southern Pulpwood Conservation Assn. meeting. They agreed with Vice Pres. W. J. Bailey, of West Virginia Pulp & Paper Co., who declared the pulpwood concentration yards are spreading the basis of original supply and serve as "show places" for the industry.

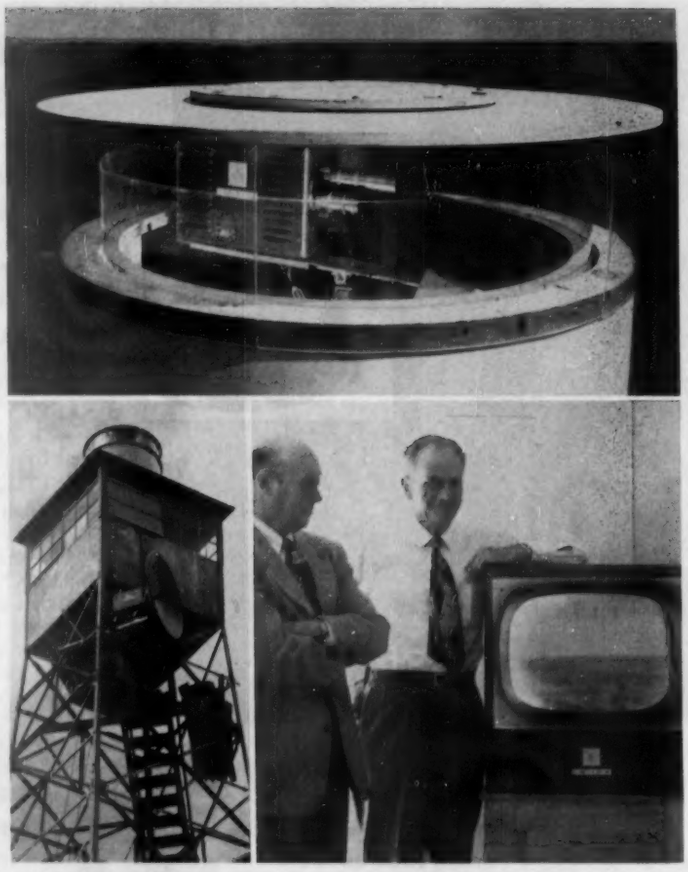
Yards are operated by some companies themselves while many dealers have their own. In general, the company yards are larger and are served by mobile cranes which may be supplemented with pulpwood loaders. The dealers, who ship pulpwood to mills from assigned areas, have smaller yards and favor the pulpwood loader because it involves a smaller investment, according to B. W. Cooper, Columbus, Ga. Mr. Cooper is associated with T. C. Brannan, Brewton, Ala., who operates several yards, including one at Fort Deposit, Ala. Pulpwood loaders are used.

One yard referred to handles 1200 cords weekly, a larger volume than anticipated due to the increased number of small producers who find it easier for them to bring in a few loads to the unloaders. It requires but a few minutes and no further labor by the producer to free the truck of its load. Where pulpwood yards have been established, there now exists reluctance on the part of producers to unload direct to a railroad car.

William Mooradian and his brother, Leo Mooradian, pulpwood dealers of Hopeville, Ga., said the yard has not developed in their area as yet. The old saying of "one man—one cord—one day" of pulpwood does not apply any more, according to their opinion, a better production rate prevailing today due to mechanization, particularly chain saws.

Common practice in their area is for the 1½-ton trucks to pick up the pulpwood close to felling and bucking points. Tractors are used by producers principally in locations or spots from which the wood could not otherwise be drawn.

Producers generally use 8¼-inch tires. Some tried the 900's but the larger tires, because heavier, were hard on the truck. The Mooradians have 20 to 25 producers, some full time and some seasonal. The dealer-producer set-up is stable with little turnover even among the seasonal suppliers. Loading is to railroad cars spotted on the closest rail spur.



(Top) CAMERA FOR TV fire detecting installation atop a fire tower in Rapides Parish, La. (Lower left) VIEW OF TV camera's Plexiglas dome on fire tower. (Lower right) C. H. JETER (at left), Vice Pres. of A. J. Hodges Industries, Inc., Shreveport, Louisiana Forestry Commission member, and JAMES E. MIXON, Louisiana State Forester, looking at view of forest land transmitted from fire-tower TV camera.

## TV Camera Spots South's Forest Fires

USE OF AN INDUSTRIAL type television camera set in a Plexiglas dome mounted atop a forest fire tower is the latest thing in detection work, according to James E. Mixon, Louisiana State Forester, who witnessed a test conducted in Rapides Parish, La., with "very promising results." Members of the Louisiana Forestry Commission were present. "Detectovision" is the dubbed name for the installation.

Set up to have a clear view, the camera is rotated continuously by means of a ratiomotor geared to less than a half-revolution per minute, the scanning being similar to a towerman but at a slower rate. The camera is equipped with a telephoto lens. Forest fires were spotted as far as 20 miles from the tower.

Azimuth markings to give the angle direction of the fire are provided in the dome for the camera to pick up, but since the infinity lens reading would be blurred a special bifocal lens is provided to pick up the numbers. Instead of a cable, microwave supplied by Raytheon Mfg. Co. transferred the images, during the test, to a television set 50 miles away in the state forest.

On a parish-(county) wide set up, three to five cameras could be used in strategic points and images transferred to the sets grouped in a central station. An operator could quickly locate a fire by reading azimuth figures from two sets, just as separate towermen's cross-lines are now used. Mr. Mixon thought the television installation would be of great aid in relieving towermen who are at times held on call duty for 24 hours. A switch is provided to turn on the bifocal for azimuth readings.

The set tested was put up by Carl LeBlanc and Bill Maser, of Louisiana Radio and Television Distributors, Baton Rouge, La., and Al Vendt, communications engineer for Louisiana Forestry Commission.

# Burma May Build Biggest Bamboo Mill

THE BURMESE GOVERNMENT is definitely going ahead with plans for a pulp and paper mill, using vast resources of bamboo, according to Harold R. Murdock, former research director of Champion Paper & Fibre Co., who is pulp-paper expert on the project. He recently returned from Burma.

Mr. Murdock is associated with Robert Hattis, consulting engineers of Chicago. Also affiliated in the project is Howard T. Fisher Associates, Chicago architectural firm.

Mr. Murdock had a rugged trip into the wilds of Burma 400 miles from Rangoon, near the East Pakistan border. The probable site would be near Akyab, where transport is only by rivers.

If tentative plans to build a 100-ton mill are carried out, it would be the largest bamboo paper mill in the world, Mr. Murdock told PULP & PAPER.

On his return he stopped off at Tokyo where he was feted by the Japanese industry. Mr. Murdock was General MacArthur's advisor on postwar restoration of the Japanese paper industry. Later he was with Robert & Co. of Atlanta, engineers.

HAROLD MURDOCK —*Returns convinced that Burma will go ahead with biggest bamboo mill in the world.*

## Homad to Represent Jackson & Church

Homad Services, Ltd., Montreal, Canada, is named representative in Central and Eastern Canada for Jackson & Church Co., Saginaw, Mich., for its line of Zenith pulp presses and Roto-pulper mixer-shredder-refiner machines, used for high density bleaching, de-inking, washing and other pulp processing applications.

Claude C. Beeman, Zenith division manager, and Bruce Armstrong, pulp and paper sales and technical director, announced the appointment.

## 1954 PULPWOOD ANNUAL Now Off the Press

**Copies of the 1954 PULPWOOD ANNUAL containing the complete papers and discussions of the annual meeting of American Pulpwood Assn. are now ready for distribution. The ANNUAL also contains a review of APA technical committee activities of the past year and the organization and program for 1954.**

**Orders for the PULPWOOD ANNUAL should be addressed to PULP & PAPER, 370 Lexington Ave., New York 17, N. Y., or may be placed through any PULP & PAPER office in the United States and Canada. Price is $1.00 per copy.**

R. C. BECHERER, *Link-Belt President, sees high level of 1954 business.*

## Link-Belt President in "P&P" Interview

Robert C. Becherer, president of the Link-Belt Co., Chicago, one of the biggest suppliers of equipment to pulp and paper industries, told PULP & PAPER in a recent informal interview that he expects a high level of business in 1954—"higher than in pre-Korean War years."

Link-Belt sales in the first quarter of this year were 15% higher than last year's last quarter.

"By all standards of normal economy, we are optimistic," he said. "The year 1954 cannot be compared with the boom years during the Korean War."

For the entire year "billed sales will probably be down some because operations have leveled out," he said.

Link-Belt serves some 95 industries, according to Mr. Becherer, and this is a factor in attaining a healthy balance of business.

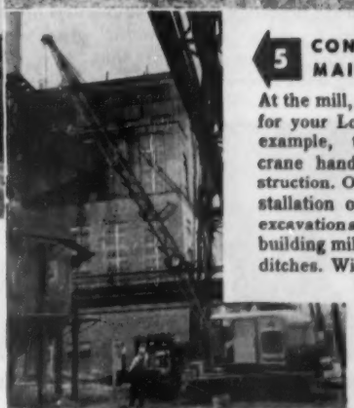
# MECHANIZE YOUR Pulpwood Handling FROM START TO FINISH

**1 FIELD COLLECTION . . .** In any season, any weather, Lorain cranes load pulpwood in the woods. Here, a Lorain "TL" crawler crane, equipped with wood grapple, starts pulpwood on its way from a Canadian stand.

**2 YARD STORAGE . . .** Maybe your pulpwood goes to a collection yard for transferral to rack cars for mill shipment, or to be placed into storage for later mill shipment. Here, a Lorain Self-Propelled crane, Model SP-254W, uses a gooseneck boom and 4-bridle sling to unload pulpwood directly from woods trucks to rack cars.

**3 MILL SHIPMENT . . .** After rack cars are loaded, the same Lorain that loads them switches over and uses a huge concrete slab "Hammer" to drive in extended logs, to neatly line up the sides of the load within railroad clearance. Here's a time-saving bonus with versatile Lorain cranes.

**4 MILL UNLOADING . . .** At the mill, rack cars are unloaded with a new Lorain "Rake" . . . with these exclusive advantages: (1) A positive and precise control of spotting the board with complete visibility; (2) Cars are cleaned quickly, easily — no hidden or stuck wood; (3) Less spillage of wood, less car damage, less cleanup . . . fewer accidents.



**5 CONSTRUCTION MAINTENANCE . . .** At the mill, there are bonus jobs for your Lorain equipment. For example, this Model L60-K crane handles new plant construction. Other uses include installation of conveyor systems, excavation and material handling, building mill ponds and drainage ditches. With 5 interchangeable boom types, your Lorain can handle any size, shape or type of material.

**SEND FOR THIS PULPWOOD "PICTURE BOOK"**


These 5 steps are but a few of the money-saving, time-saving uses for Lorain Cranes in pulpwood handling. See for yourself how other plants handle more cords per day, reduce manpower needs and get the job done faster with greater economy. Send for booklet containing job pictures and data from plants across the country.

**THE THEW SHOVEL CO., LORAIN, OHIO**

**THEW LORAIN**

## *Maybe A Chance For*
## A Good Deed in Your Town

The engineers of The Mead Corp. deserve to be commended for a recent very thoughtful act of good citizenship in the community of Chillicothe, O., and it might not even be too late for pulp and paper companies to do a similar good deed in their own communities.

The American Chemical Society's annual science essay contest for high school students was called off this year. But, unfortunately, it was not until after some young would-be scientists or industrial executives-to-be had given up pleasure time or burned midnight oil to write up entries.

In Chillicothe, the Mead Engineers Club stepped into the breach and took over sponsorship of a local Mead Science Essay Contest, with a celebration dinner, prizes, etc.

## Bad Luck Hits Twice For Hooker's Vognild

It was really bad luck when Russell O. Vognild, assistant western sales manager of Hooker Electrochemical Co., Tacoma, Wash., took time off from a busy schedule for vacation.

His car was tail-end of a 4-car accident in Chico, Calif., and was hit head-on in a side ditch trying to escape. He suffered a punctured lung, bruises and concussion. On his and wife Eva's return from California, a fire badly damaged their Tacoma, Wash., home.

## Grows Southern Pine in Pacific Northwest

Rayonier is experimenting in growing Southern loblolly and slash pine from its own Florida holdings in an experimental tract near its Hoquiam, Wash. Pacific Northwest operators are watching with interest.

**HERE'S A MAN inspecting what is said to be "the world's softest handkerchief." It is made of fine rayon fibers manufactured by American Viscose Corp. and supplied to Hermann Handkerchief Co. for its Dur-Ray handkerchiefs. Amvisco is going to get rayon pulp from the new pulp mill at Ward Cove, Alaska.**

## Woodmill Addition at Port Angeles Mill

At million dollar addition to the woodmill of Rayonier's Port Angeles, Wash., sulfite dissolving pulp mill will include a Hansel Engineering hydraulic barker, Allis-Chalmers motor-driven D. J. Murray chipper, Sumner Iron Works transfers, Western Gear reducers and conveyors and a big wood bundle deck and chipper bridge cranes by Berger Engineering of Seattle.

Stevenson & Rubens, consulting engineers of Seattle, are planning the project.

## Creosote-Bush Board

Tempron Co., headed by Dr. J. F. Berliner, Chicago, has secured an option for a site in El Paso, Tex., on a $5,000,000 plant to make pulp for hardboard out of the common resinous creosote bush, or "grease wood," which covers 35 million acres in that area. Taylor Corp., New York, is making plans.

## Pulp from Alaska for "World's Softest Handkerchief"

With the start-up of the new pulp mill in Alaska, built by Ketchikan Pulp Co., this picture takes on special significance.

This is one of the products from woodpulp rayon manufactured by American Viscose Corp., a joint owner with Puget Sound Pulp & Timber of the new mill. Amvisco will obtain dissolving pulp from Alaska.

This picture is reproduced from an Amvisco ad—showing a novel use of dissolving woodpulp. "The world's softest handkerchief—grows softer and whiter each time it is laundered"—said the ad.

## Presidents Abroad

Folke Becker, president of Rhinelander Paper Co., was a recent visitor in Mexico.

G. N. Carleton, president of Detroit Sulphite Pulp & Paper Co., is currently traveling in Europe and the Near East.

***14 OF ORIGINAL 48 STILL IN MEAD FOREMEN'S CLUB***

**CHARTER MEMBERS of the Mead Foremen's Club at Chillicothe, Ohio —founded 27 years ago—are, left to right: ERNEST AUGUSTUS, Asst. Secy, Chillicothe Realty Co.; HOWARD LAYMON, Div. Public Relations Director; WAYNE GALLAGHER, Paper Mill Foreman; ERNEST BRUNDIGE, Asst. Prod. Mgr.; HOWARD TETER, Pres., Chillicothe Realty Co.; RUSSELL SAVAGE, Vice Pres. Research; GROVER GOSHORN, Personnel Adviser; FRANCIS POPE, Spec. Asst. to the Pres.; JOHN GRAVES, Prod. Mgr.; CHARLES BURLILE, Sorting Room Foreman; WILLIAM LUDWIG, Dir. of Warehousing; LAWRENCE SPINDLER, Finishing Room Foreman; CHARLES CROW, Coating Mill Supt. JAMES O'CONNOR is the 14th charter member of the club; not present at this 27th anniversary meeting.**

# Improved waste treatment...

***300′ dia. Dorr Clarifier installed in 500′ earthen basin at a Southern paper mill removes approximately 90% of suspended solids . . . with substantial reduction in B.O.D. . . .***

Simplicity and relative economy sum up this unusual waste treatment installation which went into operation in mid 1953. Primarily installed for suspended solids removal from general mill effluent, it is also doing a good job of B.O.D. reduction.

This Dorr Clarifier-earthen basin team is suited principally for use as a primary treatment unit. Additional treatment steps can be added as needed, without affecting the initial Clarifier installation.

We'd be glad to talk to you or your engineers about the possible application of this team to your own problem. No obligation of course. Just write to The Dorr Company, Barry Place, Stamford, Conn., or in Canada, 26 St. Clair Avenue East, Toronto 5.

**Facts on waste treatment**

**Equipment:** 300′ dia. Dorr Type SS Clarifier equipped with special feedwell installed in 500′ dia. earthen basin.

**Feed:** Mill waste treated is principally paper machine waste plus general plant wash-up waste. To this, for each two parts of effluent, one part of sea water is added as a flocculent.

**Results:**

**Suspended solids removal** — Approximately 90%

**B.O.D. Reduction** — Approximately 33%

*Better tools TODAY to meet tomorrow's demand*

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FIFTY YEARS 1904-1954

***PRIMARY PULP REFINER—HIGH DENSITY HANDLING SYSTEM***

**THIS UNUSUAL PICTURE shows two levels of refining operations at Filer City mill of American Box Board. Miller Hofft, builders of bark bins, built these new type bins for revolutionary pulp process. Top left is dry blow tank by Hofft, to right are Sprout-Waldron refiners. Blow tank has live bottom discharge and high-density feed to the Sprouts. Below, left, is Hofft surge bin with live bottom discharge, following refining and feed screw leading to Sutherland screw press washers.**

# Michigan Hardwoods + New Process

ALL THE WORLD OVER there has been one inspiring dream of pulp men—cherished for these many years. That ideal has been a pulp mill with a continuous operation throughout, centrally and remotely controlled.

There have been some small specialized successes and quite a few failures, in Europe, Latin America, etc. Now, at long last, the most strikingly complete and significant success in America on a large commercial scale has been achieved at the 150%-expanded pulp and paper mill of American Box Board Co. at Filer City, Mich., 300 miles north of Chicago.

This mill now makes over 300 tons a day of corrugating medium, 15% converted in American Box Board Co. plants in Grand Rapids and Chicago and 85% sold to box plants mostly in North Central States.

This company made a thorough study of continuous vs. batch operation. It went "whole hog" for the former. For the first time, continuous cooking and refining are combined with screw press washing and the latter is introduced for the first time in a semi-chemical process. This unusual pulp mill requires no stock pumps, no piping, no thickeners. Screw conveyors do almost the entire conveying job from raw chips to pulp at remarkably high consistencies ranging from 25 to 10%.

About 13 tons an hour, continuously seven days a week—and it requires only two operating men, plus a clean-up man, for each of three shifts! The first virtually complete graphic panel board for a whole pulp mill—20 ft. long—includes all instruments and remote controls. Only the refiners have to be individually controlled.

It takes just about 30 min. for the aspen chips to be processed all the way from intake of the two Pandia 6-tube, 36-in. diameter Chemi-

# Solve Dilemma for American Box

Pulper continuous digesters (neutral sulfite 12-min. cook), through five Sprout-Waldron 36-2 single rotating disc refiners and four Sutherland screw press washers to high-density storage. It is almost a completely stainless steel pulp mill, mostly Type 304.

And that isn't all that is new at this new-old mill on Manistee Lake, four miles inland from Michigan's sandy western beach.

It has the first Fourdrinier entirely newly built for 9-pt. in a quarter of a century. It is one of the largest cantilever Fourdriniers in this industry—an all-stainless steel 174 in. (158 in. trim) Black-Clawson machine with Valley Iron pressure inlet and hydraulic controls.

### *Aspen Replaces Pine and Straw*

Thus Filer City continues to make industry history. The Dec. 1950 issue of PULP & PAPER told how American Box Board ended its many years of dependence on hard-to-get straw. And also how it changed over the new wood pulp mill it had bought at Filer City from use of costlier jackpine to the aspen, growing abundantly virtually outside the mill door.

That article was a complete description of the pioneer semi-chemical pulp mill which had started up at Filer City July 3, 1948. With a neutral sodium sulfite 75% yield process, it used three A. O. Smith vertical 1⅞ in. rimsteel digesters of 10 tons each, three Sprout-Waldron refiners and two Impco single stage washers, operating in series. In 1947 the mill had been bought from Continental Can and its conventional kraft process equipment was discarded within two years, or ingeniously put to use in the new system. So are some units of the first semi-chem plant, except that the vertical digesters now are standbys.

Continental Can had owned the mill only about one year, to tide them over a shortage. The original Filer Fibre Co. was built back in 1915 by two German-trained kraft men, the late P. P. Schnorbach and the late Max Oberdorfer, who later went to the coast and built St. Helens Pulp & Paper, now a Crown Zellerbach property. One of Mr. Schnorbach's sons remains a key figure in American Box Board's organization.

***NEW PROCESS SOLVED BIG PROBLEM FOR THESE MEN***

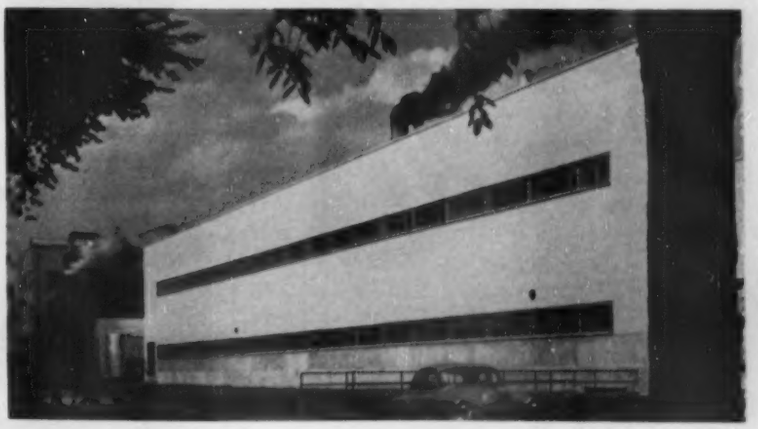
**PRES. WALTER S. GOODSPEED points to Filer City on a map of Michigan where a new pulp process and a new resource—forests of aspen—saved American Box Board Co. from a high cost production dilemma. No wonder his associates are looking on happily. Seated, l to r: GORDON B. BONFIELD, Vice Pres.-Operations; Mr. GOODSPEED; FRED W. OLDENBURG, Vice Pres.-Sales, and ROBERT K. STOLZ, Vice Pres.-Treasurer. Standing, l to r: BRUCE W. MARTIN, Division Mgr.-Filer City Division, who joined the company in 1947 to be in direct charge of the new manufacturing program; C. FENTON RABER, Director of Industrial Relations, and RICHARD P. AUMENT, Technical Director in Grand Rapids.**

Filer City, a town of about 700 people, is on the outskirts of Manistee, a town of 10,000 and the home of two salt, two bromine and one magnesium oxide plant, including Morton Salt, largest in the world, built on underground brine. But the Filer mill was built on surrounding jackpine stands. When American Box entered the picture, the available nearby pine was gone and the mill had to bring pine at $28 a cord from the Northern Peninsula, Minnesota and Canada.

And the parent plant of American Box Board, in Grand Rapids, was being forced to go as far as the Dakotas for straw for their strawboard machine. The new farmer's combines were making waste straw harder to get, too. Competition was getting rougher and rougher with the big Southern board mills.

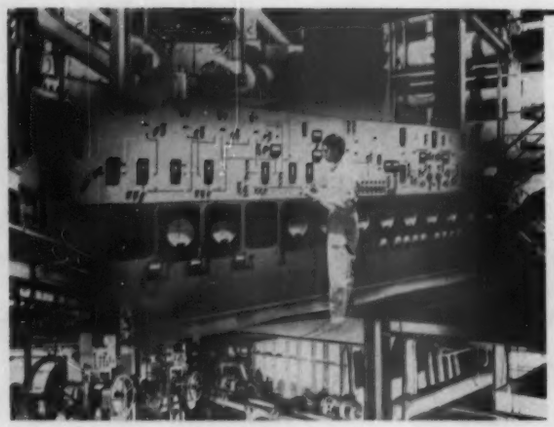
Nowhere in all this industry was the stage so perfectly set for a dramatic new development in semi-chemical hardwoods pulping. Laboratory work at the Institute of Paper Chemistry and the U.S. Forest Products Laboratory in Wisconsin provided valuable guidance and American Box Board's top management brought in Bruce W. Martin, then general superintendent at Union Bag & Paper Corp., to head

Continental Can had owned the mill only about one year, to tide them over a shortage. The original Filer Fibre Co. was built back in 1915 by two German-trained kraft men, the late P. P. Schnorbach and



***PAPER MILL AND FINISHING ROOM BUILDING***

**Exterior of new paper mill of American Box Board, Filer City, as designed by Sumner S. Sollitt Co., with continuous upper and lower fenestration for uninterrupted natural lighting of operating side of paper machine. Building is of masonry and steel.**



### REPRODUCTION OF COVER PICTURE

**The montage cover photo shows principal equipment of the continuous process from chips to high density storage at American Box Board Co., Filer City, Mich.**
**Center is the graphic control panel designed by Sumner S. Sollitt Co., of Chicago. The panel was equipped and fabricated by Foxboro, Inc.; graphic panel inlay by Formica Co.; alarm system by Panalarm, Inc.; contact making ammeters and volt-meters by McCleery Engineering Co. Every operation through the pulp mill to final washing is controlled on the graphic panel.**
**Upper left, screw press washers by Sutherland, Inc., and variable speed magnetic coupling drives by Dynamatic Div. of Eaton Mfg.**
**Upper right shows continuous digester furnished by Pandia, Inc.**
**Lower right shows Miller-Hofft's high-density surge bin with variable speed live bottom discharge.**
**Lower left shows Sprout-Waldron primary refiners with individual control panels and control for variable speed high density pulp feed screw conveyors by Conveyor Systems, Inc.**

## GRAPHIC PANEL FOR ALMOST ENTIRE PULP MILL

**FOXBORO Co. designed and equipped this 20-ft. long graphic panel for Filer City, Mich. The board is 7½ ft. high; graphic portion and instruments 3 ft. high.**

Section at left shows panel for Sutherland screw press washers. Stock from refiners is conveyed to *surge bin (14)*, thence to first screw press washer. Stock at inlet to first Sutherland washer is level controlled by *Item 2* by varying speed of conveyor from surge bin. Consistency of stock in first screw press is also controlled by measuring motor load on first press washer and adding strong black liquor as required to maintain constant motor load. Filtrate from first screw press washer enters strong liquor tank, and surplus is automatically discharged to Waco filter.

Master rheostat shown below first screw press washer controls speed of all washers simultaneously. However, independent adjustments of each speed are possible due to trimmer rheostats mounted below large instruments on panel. Tachometers are provided to show each of these speeds.

Stock from first screw press washer is conveyed to second and other screw press washers in series. Hot wash water from condenser enters third and fourth screw press washers and is fed countercurrent from the liquor tanks back to the first washer as shown. The flow of hot wash water is under flow control by *Items 8 and 9* on the drawing. Thus, sufficient water is used for washing without waste.

Stock from the last screw press washer enters the high density *storage tank (13)*, on which the level is indicated. Stock is diluted prior to pumping to the mill.

Section of graphic panel at right shows portion for digesters, refiners and blow heat recovery. Chips are stored in *Bin 39* and are withdrawn through variable screw conveyor onto a transfer conveyor. Magnetic pulley and electromagnet on this conveyor removes tramp metal. They are then discharged into *Hopper 41* and are pneumatically transferred to dual chip storage bin above Pandia Chemi-Pulpers. Chip level is maintained in hopper by adjusting speed of screw conveyor located below chip bin. In order to do this, force cells are mounted in bin support members and this force is converted to pneumatic signal to controller mounted on graphic panel, *Item 23*. Thus, if level tends to increase, flow of chips is reduced and conversely lights are provided on graphic display to indicate when vibrators are operating to keep chips moving freely down chip bin into the Chemi-Pulper feed screws.

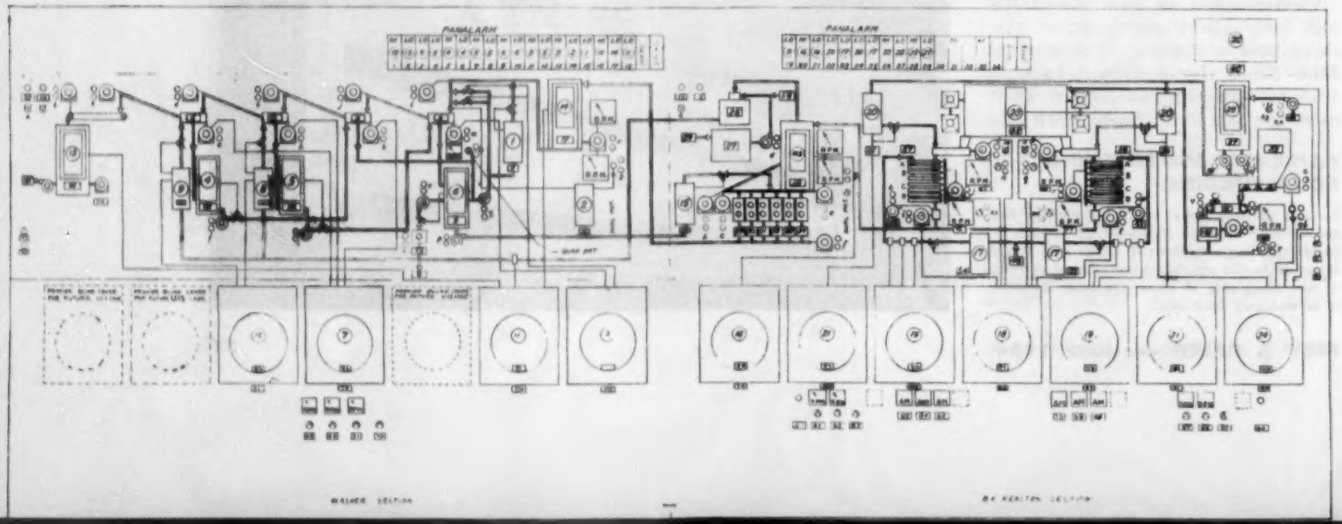
Neutral sulfite semichemical cooking liquor is stored in *Tank No. 25*. Level in tank is automatically controlled by starting and stopping supply pump as shown. Either one of two pumps is used to deliver liquor to the Chemi-Pulpers, one serving as a standby. All pumps and electrical equipment on graphic panel are operated remotely by push buttons and, when in operation, a red light is shown on the graphic display.

Duplicate instrumentation is provided for each Chemi-Pulper system as shown. The liquor is under flow control, *Items 20*. The pressure in digester is maintained at any desired value by pressure controllers *(17)*. One of large instruments below graphic display records this pressure and also temperature and flow of steam to Chemi-Pulpers.

In case of insufficient supply of chips to maintain plug in digester feed system, digester pressure would drop. Under these abnormal conditions, it is necessary to shut down Chemi-Pulper and close liquor and steam valves. This is all automatically taken care of through control system. One of Panalarms also comes on to indicate this abnormal condition. Battery of Panalarms, as shown, warn operator of deviation of any operating conditions from normal values, so steps may be taken to correct conditions.

Screw conveyors cause chips to pass through Chemi-Pulpers and they are removed through Pandia discharger into dry blow tank *(16)*. Speed controls are provided for regulating speed of feed screw, and Tachometers show actual speed of screws. Also, a master speed control is provided for main drive motor for each Chemi-Pulper, together with secondary adjusting rheostats mounted below large instruments on panel, to vary speeds of different digester tubes.

Speed control system is manufactured by Dynamatic Div., and is remotely controlled from graphic display. Pulp and steam are discharged into dry blow tank, steam passing on through condenser, *(26)*, where water from *Tank 27* is used to condense steam. Hot water from *Tank 27*, in turn, is used in screw press washing system. The pulp drops into bottom of dry blow tank and is fed to Sprout-Waldron refiners with screw conveyor at high consistency. Excess is returned to the dry blow tank. Refiners are provided with two lights, one red for normal operation of unit, and white light being an alarm condition for high motor load.



up the program. Engineering and construction of the job were under the direction of W. L. Schnorbach, who, with the assistance of other members of the Filer City staff and the engineering staff of Sumner S. Sollitt Co., Chicago engineering firm, is given credit for the many original ideas that went into this mill.

Mr. Martin had a master's degree in ch. e. from Louisiana State, got valuable basic training as assistant to Wilbur Gillespie, Gaylord Container's veteran technical director. For six years he based at Grand Rapids, working closely with Pres. Walter S. Goodspeed, Vice Pres. G. B. Bonfield, and other top company executives, but now he has moved to Filer City, 120 miles to the north. He is now resident division manager and a member of the board of directors.

Milford Nossaman, now production manager, and William L. Schnorbach, engineering and technical manager, are two chief assistants to Mr. Martin in the greatly enlarged Filer City operations. Both are veterans there, and they and others of the staff had important roles in planning and carrying out the expansion. Mr. Schnorbach, son of one of the co-founders, has been with this mill since he graduated from Michigan in 1937, except for four years as an army pilot. Mr. Nossaman has been with the company since 1931 when he started in the Grand Rapids mill.

In this latest expansion phase, the services of Sumner S. Sollitt & Co., Chicago engineering firm with a worldwide experience and reputation, have been important.

### *More Michigan Mills Use Hardwoods*

But one of the greatest savings of all is in wood use and wood costs, and its significance in the forest conservation long-term picture for the state of Michigan cannot be too strongly emphasized. For at Filer City, only 1.33 cords of the prolific aspen, or "popple," formerly considered a useless "weed" tree, is required for a ton of pulp. The old mill required at least 2.33 cords of jackpine per ton.

Within 150 miles of Filer City, aspen is *growing* at the rate of 400,000 cords per year. Only half of that amount is required for this mill. The company is investing $2,000,000 a year or more in this former "weed" forest. The mill could get all the aspen it needs within 20 or 25 miles of the mill, but prefers to spread out—going as far as 100 miles or more—a far-sighted policy. More than 95% comes in by truck.

Incidentally, five other paper mills in South Michigan, a Grand Rapids excelsior plant and even small lumber mills are using aspen, either entirely or partially. Surveys show enough aspen is growing in Michigan to keep several mills operating forever, and will even allow for moderate expansion. One mill, Warren's Central Division, is now expected to make much greater use of oak, another prolific Michigan species. Maple, birch, beech, and basswood are other Michigan species being used, and at Filer City about 10% of other hardwoods are mixed with aspen.

Filer City has contributed $12,000 already to University of Michigan research in aspen hybrids and growing techniques which should greatly increase rate of growth. Quite a contrast to only recent years when cruisers would even pass up counting aspen and foresters actually were trying to kill it out.

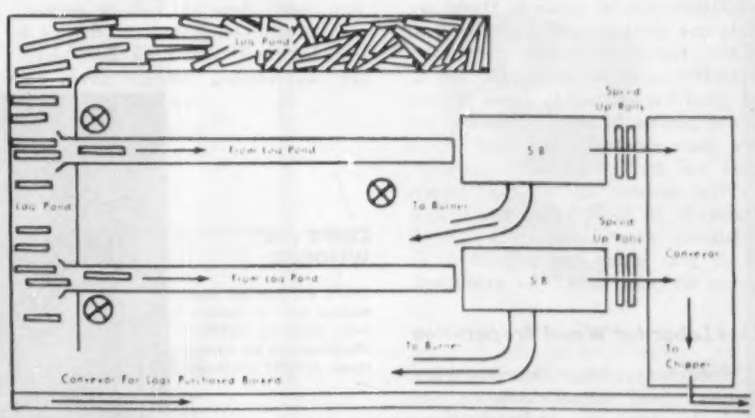
Manistee-born Art F. Koller is woods manager for American Box Board and has two foresters working under him—Rowland Blair, chief, and T. M. Kataja, both products of Michigan State.

The company now owns 6,000 acres and is adding to it. Federal and state holdings of aspen are extensive and Consumers Power Co. has big holdings. So much aspen is growing in north Michigan that the state has urged American Box to use some of it.

"Not long ago the Forest Service

**UNUSUAL FEATURES AT FILER CITY**

- **Continuous cooking and refining combines with screw press washing.**
- **No stock pumps—no stock piping—no thickeners.**
- **Screw conveyors do virtually all conveying at 10% to 25% consistencies.**
- **Only 2 operating men for pulp mill with virtually all instruments and remote controls on one graphic panel.**
- **Amost a complete stainless steel pulp mill.**
- **Just 30 minutes from chips to high-density storage.**
- **12-min. neutral sulfite cooks for aspen chips.**
- **Pulp production of 13 tons an hour, seven days a week.**
- **First new Fourdrinier for 9 pt. in over 25 years.**
- **One of largest cantilever type Fourdriniers.**
- **Big saving of building cost because of compactness, "shoehorning" of older and new pulp mills.**
- **A 120% addition to power facilities.**
- **Modernization of older No. 1 paper machine.**
- **Production of mill increased 150% to over 300 tons daily average.**
- **With change from pine to aspen, wood consumption per ton of pulp is cut almost in half, and costs much less.**




***FLOW SHEET OF WOODYARD AND BARKING PLANT***

**X'S IN CIRCLES denote operating personnel required for pond and Slaughter jackladders which lead to two Allis-Chalmers Streambarkers at right. Logs 4 to 8 ft. in length and 4 to 24 in. diameter can be handled by the Streambarkers. Logs are circulated by controlled water currents in pond. All steel conveyor below carries purchased barked logs direct to chipper.**

**UNLOADING ASPEN INTO CIRCULATING POND**

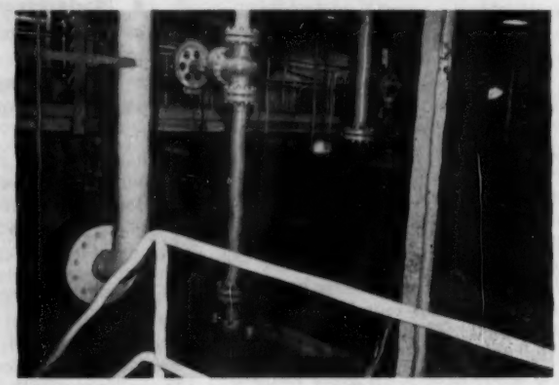
**BLAW-KNOX one-cord grapple was developed at this mill years ago and has now become standard. Used with Industrial Brown hoist.**


***TRACKMOBILE MOVES FLAT-CAR WOOD***

**WOOD which comes in by flat car is moved into position for unloading into pond by means of new WHITING Trackmobile.**

**FROM POND TO BARKERS**

**AFTER PONDING, pulpwood logs are taken to the Streambarkers by two W. H. SLAUGHTER Co. jackladder conveyors.**



**NEW STREAMBARKERS DO CLEAN, QUICK JOB**

**BARKING is handled by two late model ALLIS-CHALMERS Streambarkers, with CRANE valves, and NORTH water filter.**

was spending money trying to grow pine on aspen sites," Mr. Koller told PULP & PAPER. In his 16 years, working in woods of Michigan, Minnesota and Ontario, he has seen many changes. He recalled that in 1950 the U.S. Forest Service estimated 6,000,000 acres of aspen in Michigan, only one-sixth in poor stocked areas.

Mr. Koller estimates there are 5,000,000 cords or 400,000,000 cu. ft. of good merchantable aspen in the lower peninsula alone, counting out the poor stocked areas and aspen that will be lost by over-maturity.

"The present age of most aspen stands is 30 to 50 years and it is a relatively short-lived species of 40 to 60 year spans and only 25 to 40 years on poor sites," he explained.

### Less Labor for Wood Preparation

Woodroom improvements—yard conveyor and chipper building and contents—were an early development and were designed by Roderick O'Donoghue, pulp and paper consulting engineer of New York. Main features are two Allis-Chalmers Streambarkers, engineered by H. K. Ferguson Co., debarking 12 cords an hour each with 1250 psi. water pressure. Throughout the wood end, labor savings are notable.

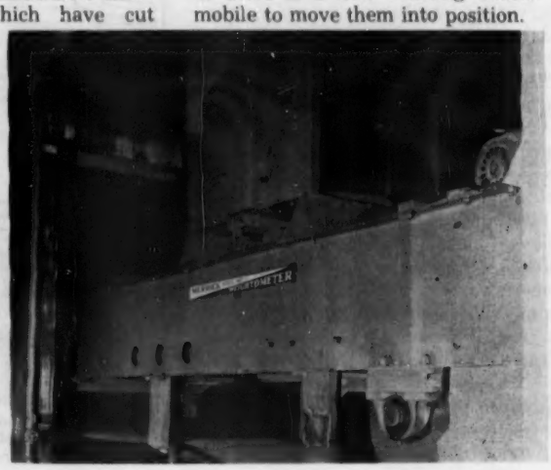
A circulating pond with an Economy pump feeding water at 25,000 gpm, with flow at 6 ft. a second, and an all-steel Wisconsin Bridge & Iron log haul with Link-Belt chain are innovations which have cut down much hand labor. The latter is for purchased barked wood.

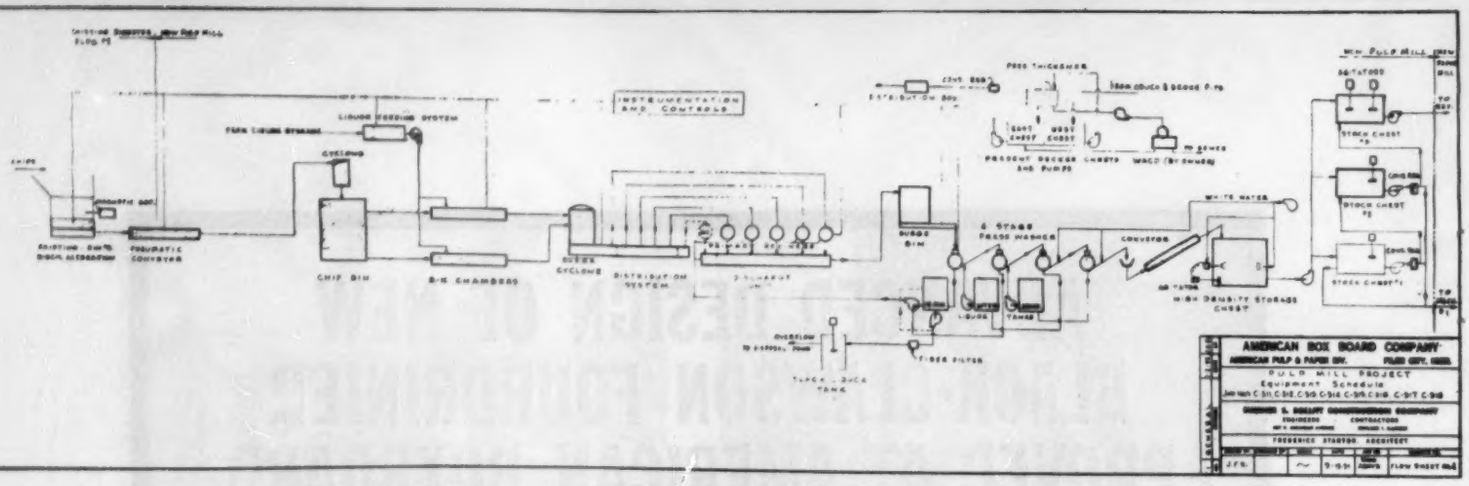
It may be noted that a Blaw-Knox one-cord grapple, still in use, was developed at this mill to use with an Industrial Brown hoist when buckets were too big for the job, and now it has become standard in the industry.

For the flat car wood which comes in there is a new Whiting Trackmobile to move them into position.

**CHIPS ARE *WEIGHED***

***CHIPS are carried from storage bins to continuously weighing MERRICK Weightometer by double screw JEFFREY discharger.***






**FLOW SHEET FOR FILER CITY'S PULP MILL**

**CHIPS ARE FED into two 6-tube PANDIA digesters. At center are the HOFFT dry blow tank and battery of five SPROUT WALDRON disc refiners. SUTHERLAND screw presses for four washing stages at right. Note how strong, intermediate and weak liquors and white water are circulated and used at right. After WACO liquor filter, comparably small amount of waste liquor goes to pond across lake. Chips are moved throughout by screw conveyors except where blown by steam pressure from PANDIA discharger to dry blow tank.**

Two W. H. Slaughter Co. jackladders take logs from the pond to the barkers. Only two men are needed to guide logs to ladders.

The latest model Allis-Chalmers Streambarkers are 15% speedier than older models and are credited with doing a cleaner job, decreasing chemical cooking requirement and improving end product right at the start. Less wood loss is achieved.

By conveyor the barked 8-ft. logs, ranging from 2 to 6 in. diameter, move to an 88-in. Carthage 10-knife chipper driven by 400 hp slip-ring General Electric induction motor with J. E. Rhoads & Sons flat belt short center drive.

After chipper a Dings magnetic pulley removes metal. On the chip feed above the digester feed bin is an Eriez electromagnet. A pneumatic system handles chips over the new continuous digesters.

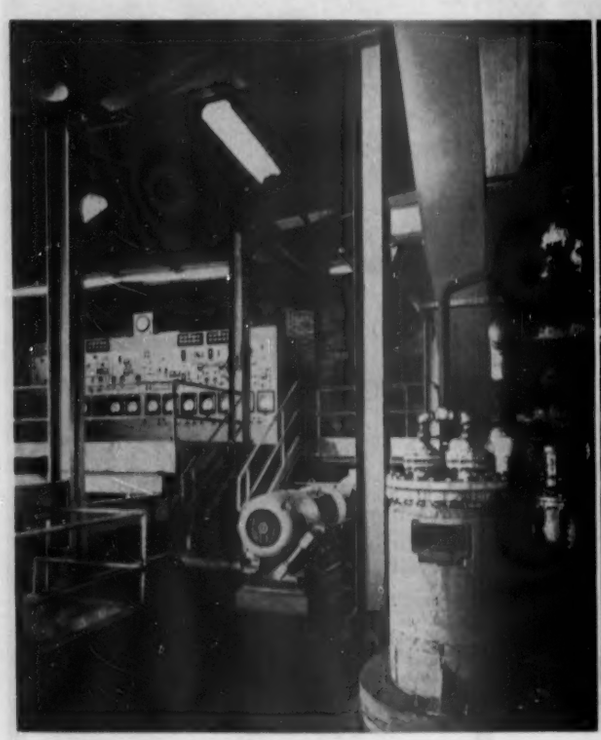
### *Pulp Process at High Densities*

Virtually all handling in this unique pulp mill is by screw conveyor.

After chips are carried by belt to five storage bins, they are discharged via a double screw Jeffrey discharger to a continuously weighing Merrick Weightometer.

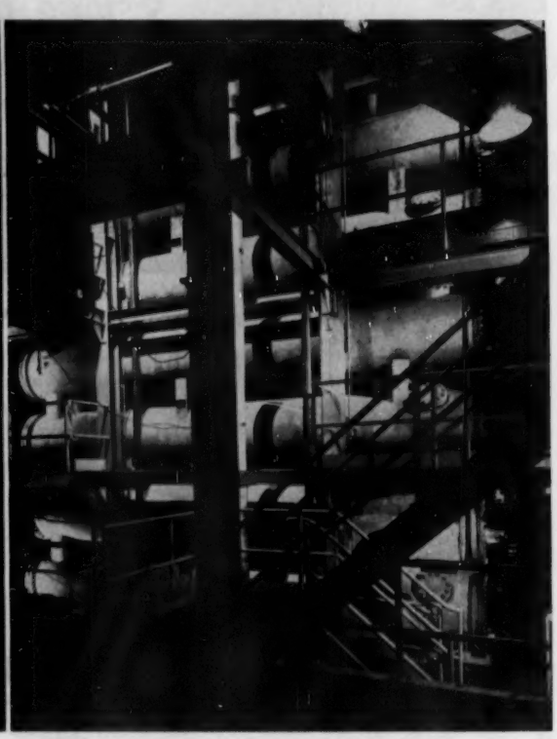
Here a Dracco pneumatic system blows chips to a cyclone separator whence they are discharged into a divided bin serving the two Chemi-Pulper continuous digesters, supplied by Pandia, Inc., New York. Based on the Kehoe-Beveridge Reaction Chamber invention, these are large units with six 21-ft. long, 36-in. diameter horizontal tubes, and there is space for adding tubes for more production.

A G. D. Jenssen Co. neutral sodium sulfite liquor preparation plant includes a strainer, brick-lined storage tank, vaporizing unit, lead- and brick-lined steel saturating tower



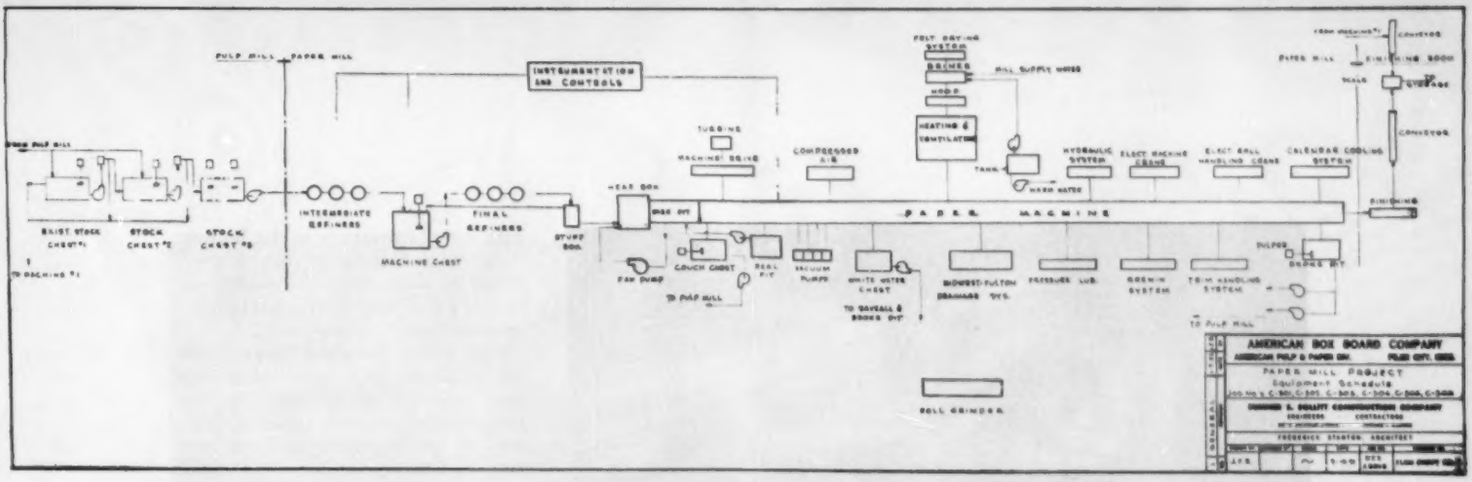
**CONTINUOUS DIGESTER LIQUOR FEED SYSTEM**

**20-FT. LONG SOLLITT-FOXBORO graphic panel for almost entire mill on raised level (back left); in middle are LOUIS ALLIS coupling and drives for continuous digester; right front, PANDIA liquor feed system.**



**12-MIN. COOK FROM TOP TO BOTTOM**

**SCREWS DRIVE CHIPS continuously through tubes of Pandia Chemi-Pulper digesters, from top to bottom. Sodium sulfite liquor enters top tube with chips and steam is introduced in second tube.**




and absorption tower, all automatically controlled. In the digesters the liquor is piped to the first of the six tubes and sprayed onto the chips. Steam is introduced in the second tube. Chips are fed to the digesters by Pandia 36-in. screw feeders. The screw feeders and digester cooking time control screws are driven by Louis Allis variable speed drives.

The chips come out into Pandia dischargers, one for each digester, and these were only the second installation of this equipment, with continuous blow valves. Chips are blown upward by steam pressure up 65 ft. and horizontally 40 ft. to what is called a dry blow tank—a live bottom Hofft storage bin. This is a 16 by 12 ft. tank, constructed like the conventional Hofft bark bin with screw conveyors in the bottom, and cyclone to draw steam to a spray-type heat exchanger, and then hot water is used in screw presses.

Pulp leaves the dry blow tank at 25% consistency. With only 12-min. cooks, the two digesters are producing close to 300 tons daily.

By gravity and then by distributing screw conveyor, the chips are carried to the metering screw feeders. Each feeder is driven by a Louis Allis Adjusto-Spede drive and one feeder is provided for each refiner. Each metering screw feeder discharges into a chute connected with the high speed screw feeder which is part of the Sprout-Waldron refiner.

A recirculating conveyor returns the excess stock to the Hofft dry blow tank.

Besides the five Sprout-Waldron 36-2 refiners in this pulping system, three are in use in the vertical digester-blow tank semi-chemical pulping system which is still operated when needed to provide extra pulp.

Screw Conveyor Corp. supplied all such conveyors with all equipment and construction in stainless steel except the screws of black iron.

A twin screw conveyor transports the refined pulp at 12% consistency to a Hofft surge bin similar to the digester blow tank and equipped

### *FLOW SHEET FOR FILER CITY'S PAPER MILL*

**THIS IS THE FLOW for the new 174-in. BLACK-CLAWSON Fourdrinier which runs at 1,000 fpm, turning out 200 tons per day of 9 pt. Six SHARTLE refiners are ahead of the machine, which is fed through a VALLEY IRON WORKS headbox. Finishing is off to the left where the line joins output of the 162-in. BELOIT No. 1 machine.**

### *IN ONE PASS, CHIPS ARE REDUCED TO FIBER*

**DOUBLE-DISC 36-in. Sprout-Waldron refiners are important step in semi-chemical process at Filer City. Each refiner has automatic control panel. This is a necessary local operation and the only one in entire pulp mill, because pulp must be closely controlled going through the refiner. Electric Machinery 4,160-volt motors drive each refiner, and metering screws above have Louis Allis Adjusto-Spede drives.**

### *SCREW PRESS WASHERS COMPLETE CONTINUOUS SYSTEM*

**AT HIGH CONSISTENCY, these Sutherland screw press washers (there are four in all) help reduce quantity of waste liquor as well as BOD. These are first in industry with variable speed—General Electric motors and Dynamatic clutches.**

**WET END SECTION OF PAPER MACHINE**

LOOKING DOWN on the new 170-inch Fourdrinier built by Black-Clawson for American Box Board, with Valley Iron pressure inlet, Ross Engineering hood. All controls are hydraulic.

**170-INCH FOURDRINIER PAPER MACHINE**

FIRST FOURDRINIER made new for 9 pt in 25 years is this one at Filer City. Black-Clawson supplied the machine, with stainless steel pressure headbox by Valley Iron, hood by Ross Engineering.

**DRY END OF PAPER MACHINE**

VIEW OF BIG paper machine from dry end shows Langston winder and Ross hood.

with screw conveyors in the bottom. Pulp from this surge bin is conveyed by another screw conveyor to the series of four Sutherland stainless steel screw presses.

Pulp enters the screw press washers at about 10% consistency and this rises to about 36% in the presses, which operate in series. Liquor is recirculated and dilutes stock and finally the less-than-usual amount of residue waste liquor resulting from this high consistency, semi-chemical process is piped across Lake Manistee and ponded. The BOD also is reduced by pressure washing.

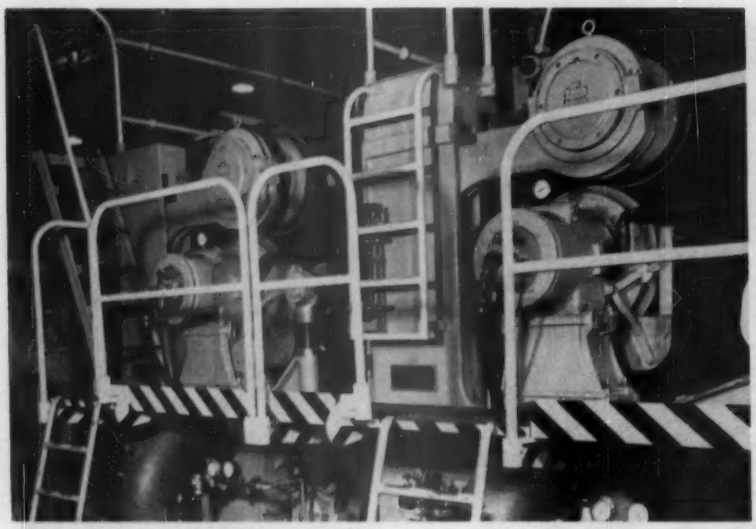
The Sutherland screw washers were built by Valley Iron. They are driven by General Electric induction motors and are variable speed for the first time, with Dynamatic Corp. variable speed water-cooled Eddy current clutches, an inexpensive means of getting varied speed with a standard induction motor. First and second press drives are 150 hp.; the other two are 125 hp.

A W. H. Slaughter Co. conveyor feeds washed pulp into a 40-ton Kalamazoo Tank & Silo high density storage tank at 18% consistency. The tank is tile lined and has Impco equipment for hydra-mining or removal at its base. Discharge is into one of three chests with Impco agitators and ahead of these are DeZurik consistency regulators.

There is the first almost complete panel board for an entire pulp mill. Only refiners require their own controls and these are unusual—being right on the refiners. The entire operation is remotely controlled and regulated on a 20 ft. long control panel with Foxboro instruments and with Panalarm units, made by a Panellit affiliate, across the top to warn of any interruptions or troubles. The Formica panel is entirely inlaid with identifying colors. The complete flow is shown, every instrument included, also indicators, flow meters and the variable speed controls, tachometers and control buttons are near the equipment they serve. Sumner S. Sollitt Co. assigned two engineers to a 2½ year job in designing this panel. Foxboro made and installed all instruments.

Dynamatic Corp. and Louis Allis Co. supplied variable speed drives throughout the mill, which are unusual innovations for close controls. All couplings over 15 hp are Dynamatic and all 15 and below are Louis Allis.

All digester tubes, and screws, pressure washers, conveyors, and most conveying screws are of stainless steel. It is a compact pulp mill,



***VIEW OF PRESS SECTION***

**PRESS SECTION of Black-Clawson machine, with Vickers hydraulic controls throughout. Catwalks and ladders are convenient.**

all in one building and requires only two operators plus a cleanup man.

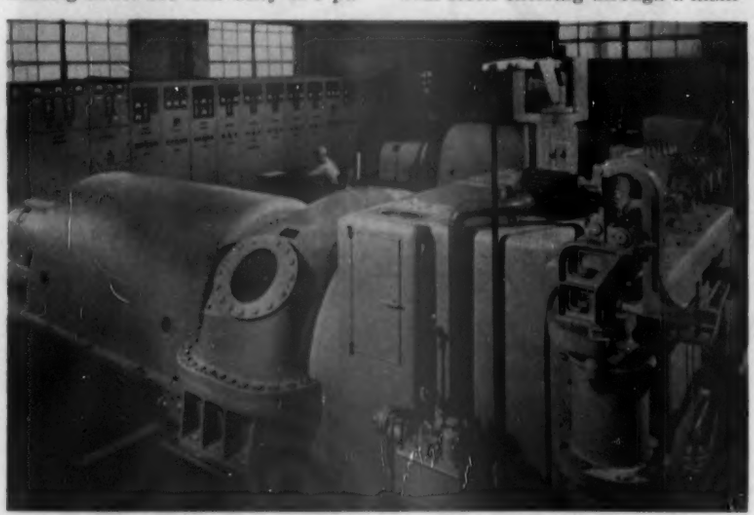
### *New Machine Runs at 1,000 fpm*

All pulp at Filer City is converted on the two paper machines as corrugating medium. The new 174-in. Black-Clawson Fourdrinier operates seven days a week and the 162-in. older Beloit machine operates five days. Trim widths are 158 and 140 in.

A new modern machine room of concrete and steel reinforcing and without beams houses the new machine. Its top mechanical speed is around 1,500 fpm, and it is presently making about 200 tons daily of 9 pt. at about 1,000 fpm. It has Vickers hydraulic controls throughout for changing wire, press loading, etc. It has a 110 ft. wire. The Fourdrinier is one of the largest of cantilever design.

Ahead of the machine are six Shartle No. 5 Miami jordans driven by Electric Machinery Mfg. 400 hp synchronous motors. The Valley Iron pressure inlet is one of the first of 9 pt. Stock reaches it via a Shartle 12,000 gpm fan pump with 35-ft. head driven by an Electric Machinery 150 hp synchronous motor with adjustable speed magnetic drive and Regutron speed control.

The Valley inlet is stainless steel with stock entering through a manifold by hydraulic pressure to a closed conduit with distributing rolls. Nozzle and apron blades are adjustable.



***5,000 KW TURBO-GENERATORS***

**HERE ARE TWO 5,000 kw General Electric turbo-generators for new pulp and paper operations at Filer City. GE panel is in back.**

A Foxboro pressure instrument controls the head and Foxboro instruments are serving other sections of the machine. Midwest Fulton drainage, six Nash vacuum pumps, Bird Vickery felt conditioners, Black-Clawson air wire guide and Beloit air felt guide, Nugent lubrication system, and Johnson Corp. steam joints and load compensators for dryers are among auxiliaries. J. O. Ross Engineering Corp. provided complete hood for dryer section and air system for the room.

The press section has two straight through suction presses. Top rolls are 25-in. Neoprene covered and suction rolls are 36 in. bronze shells. Dryers are in 2 decks, 52 paper dryers, 16 felt dryers—all 60 in.—and in 36-in. lead-on dryer.

Any dryers can be taken out without tearing down the entire frame. Open frame provides good circulation, and easy access to bearings and gears. Footwalks and ladders are convenient. Nine totally-inclosed Black-Clawson hypoid gears are on couch, two on presses, four on dryers, and on reel and calender. J. E. Rhoads & Sons leather belts on cone pulleys connect with basement line shaft and 1250 hp Westinghouse turbine. Couch, calender and dryer drives are served by Wichita Clutch Co. air clutches and brakes and electrically operated inching mechanisms. An E. D. Jones Liebeck Disintegrator handles broke continuously at dry end. This stock is returned to the system after going over a Waco filter.

The calender stack with three Lobdell rolls can be easily expanded to eight. It is followed by the first new Black-Clawson horizontal wind hydraulically controlled high speed reel, capable of winding up to 96 in. rolls. Then comes a Samuel Langston 4,000 fpm heavy duty slitter and winder which will wind a 72-in. roll double drum. Beloit provided an unwind stand and air break.

A hydraulic roll table was made by Rotary Lift Co. of Memphis and from here rolls go to Epco floor roller conveyor, then onto a Fairbanks Morse scale, to shipping.

Lobdell United provided a 36-in. special gear head, 28-ft. bed roll grinder.

York Co. put in a temperature controlled humidity testing room.

Considerable modernizing and improvement was done on the older machine, too.

One of the showplaces of this

mill is the modern power plant, the first unit of which was described fully in the Dec. 1950 issue of PULP & PAPER.

Now there has been added a 200,000 lbs. per hr. Babcock & Wilcox boiler operating at 600 psi 750 degrees. Also a 5,000 kw single extraction back pressure General Electric turbo-generator.

The first new power unit included a 125,000 lbs. per hr. B & W boiler and one 5,000 kw double extraction General Electric turbo-generator. Space was allowed for the second. Pulverized coal will be burned in the new B & W boiler and the first is outfitted to burn pulverized coal, gas or oil.

Generally speaking, all the regulating power equipment throughout this mill was furnished by General Electric.

Controls for the boiler plant are by Republic Flow Meter Co. and combustion control by Hagan Corp. American Blower furnished fans and ash handling is by United Conveyor equipment. B & W pulverizers with Buffalo fans are supplied.

A complete new pump house is at water's edge of Lake Manistee, whence water at 350 gpm is Permutit treated and Worthington boiler feed pumps are supplied.

## Comments on Engineering Aspects of Filer City

The nine point semi-chemical pulp paper mill recently completed at Filer City by American Box Board Co. was an example of the success of an ideal relationship between the highly qualified engineering staff of the company and the mechanical, electrical, process design, structural and construction engineers of Chicago's oldest firm of engineer-contractors, Sumner Sollitt Co. The Sollitt Co. specialists simply merged with American Box papermaking experts (after having successfully worked together on American Box Board's new Grand Rapids container plant) so that this complicated expansion program was accomplished in the most economical manner and in record time.

Among the major problems in the pulp mill expansion was the serious corrosion factor encountered with the existing stationary digesters and waste liquor disposal. Because of this, consideration was given to a continuous cooking process for corrosion control as well as a press type pulp washing system featuring low water consumption.

Both the continuous type digester and the press washer have been used elsewhere, but never before have these units been joined in a continuous "chip to finished pulp operation with centralized control."

***MANAGEMENT PERSONNEL AT FILER CITY***

**(L to r): WILLIAM L. SCHNORBACH, Technical and Engineering Manager; MILFORD NOSSAMAN, Production Manager; DONALD VOIGTS, Technical Department Superintendent; ARTHUR KOLLER, Timber Manager; FREELAND MORRISON, Sales Manager, Filer Division; WILLIAM STUBBS, Personnel Manager.**

**(L to r): RICHARD KNECHTGES, Pulp Mill Superintendent; FELIX WILKS, Paper Mill Superintendent; RALPH JACOBS, Material Handling Superintendent; ROBERT HARMER, Power Superintendent; TONY FLOERCHINGER, Maintenance Superintendent; CLAUDE SIMONS, Project Engineer.**

The transfer system for handling up to 25% high density pulp as discharged from the continuous digester, had to be developed to complete the cycle of continuous operation. This high density transfer medium proved to be the factor that eliminated the dilution, dewatering and pumping problems of the batch system.

In an effort to apply this continuous operation principle to the most direct product flow system, an existing structure housing the abandoned rotary digesters and diffusers provided an ideal location for this expansion. Further, the compactness of this equipment assembly also lent itself well to placement within the existing structural confines, with sufficient area available for the duplication of this system.

In order to operate this completely continuous pulping process with a minimum of man-power, a centralized control station was designed. This central control developed into a graphic-type operator's panel, thus permitting the up-to-350 ton capacity pulp mill operation to be run by one operator, an assistant and a utility man.

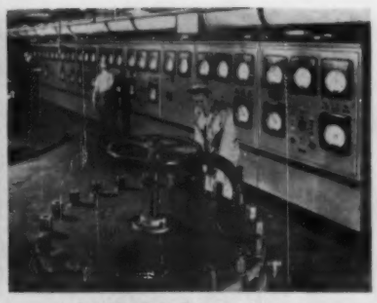
The entire liquor, steam, water and product flow is outlined on this panel. The production rate of the various parts of the system can be controlled from this panel to suit the output requirement. Continuous records made of all important elements of the process are used for quality control and further research. This quality control system has added considerably to the tonnage of an existing paper machine in addition to the economy effected in the chemical, water and steam consumption, and a proportionate reduction in labor costs.

The successful development of this progressive pulp mill operation, was largely due to the close cooperation and combined efforts of American Box Board Co. research and engineering divisions and the engineering forces of Sumner Sollitt Co., along with contributions of manufacturers of the equipment.

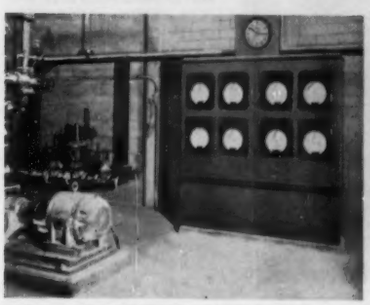
American Box Board Co. has introduced to the paper industry methods to produce economically high quality pulp on a production basis, and put into being the first pulping method by which pulp can be made continuously from chips in a 30-minute operation.

The design of the new mill building housing the new No. 2 Fourdrinier machine has been developed so that by a mere extension of the truss system and relocation of the supporting steel, a future opposite-hand machine can be added, resulting in an unobstructed common operating aisle. This expansion work could be done without interruption of the present production facilities.

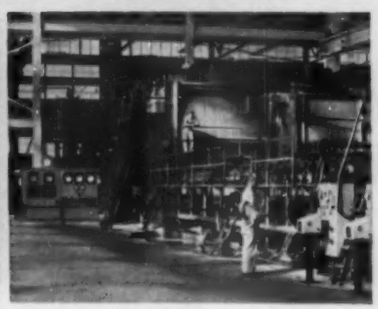
Alkaline Pulp Digester Control
*Riegel Carolina Corp.*



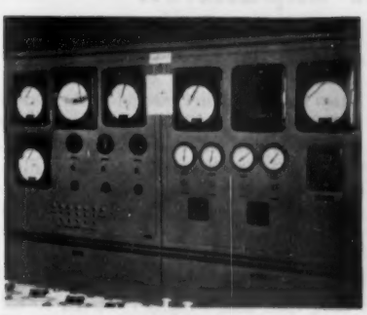
Sulphite Pulp Digester Control
*Weyerhaeuser, Pulp Div.*



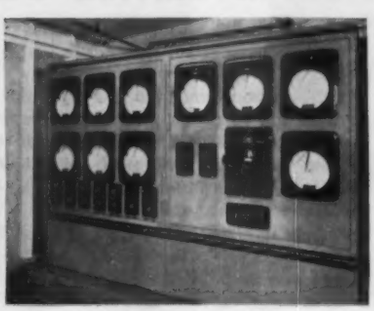
Recausticizing Control
*Brown Co.*



Paper Machine Wet End Control
*Southern Paperboard Corp.*

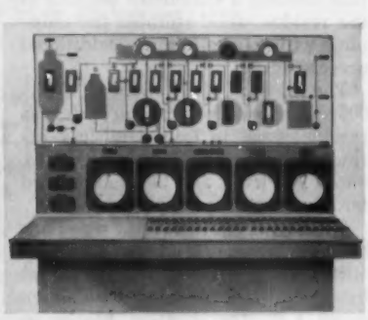


Pulp Drying Control
*Riegel Carolina Corp.*



Screen Room Control
*Brown Co.*

Bleach Plant Control
*S D Warren Co*



Brown Stock Washing Control
*Gaylord Container Corporation*

# Automatic Control Systems for every Pulp and Paper Process

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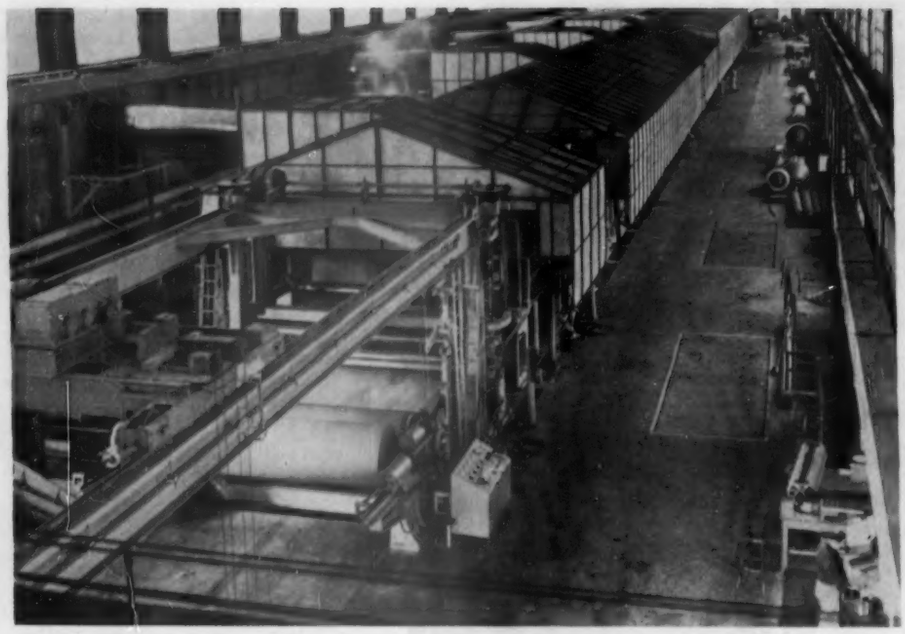
**Pulp and Paper Mill INSTRUMENTATION**

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND



**140 FT. ADDED**

**WEYERHAEUSER'S RICE BARTON machine at Springfield, Ore., Containerboard Mill was lengthened 140 ft. as production was increased. DREW ENGINEERING provided hood and ventilating equipment.**

# How Springfield Kraft Mill Carried Out Expansion

EXPANDING OF KRAFT containerboard production from 250 tons to 350 tons per day was a 1953 accomplishment of the Pulp Division, Weyerhaeuser Timber Co., Springfield, Ore.

This mill, built as a component of the new Weyerhaeuser wood-use center at Springfield for integrated utilization of timber crops grown on the company tree farm in this area, started producing in Sept. 1949. At that time the pulp mill subsisted on leftover wood from the company's adjacent 500,000 bd. ft. per day sawmill which inaugurated production but a short time ahead of the containerboard plant.

The size of this Lumber Division plant was determined by the sustained yield volume resulting from the tributary tree farm. The pulp mill was designed in conformity with amount of by-product wood available from the lumber operations.

Subsequent developments have, according to J. O. Julson, manager of Springfield Pulp Division, resulted in greater supply of wood suitable for pulp. Factors making additional pulpwood available include lumber division's construction of additional primary plants, more complete salvage in the woods, and installing special facilities for processing pulpwood which couldn't be economically processed in the sawmill for subsequent utilization in pulp division.

Within the past couple of years two new Weyerhaeuser plants have been constructed from which by-product wood is utilized as raw material for manufacturing pulp at Springfield. These consist of a complete plywood plant at Springfield millsite and a lumber manufacturing plant at North Bend, Ore. Although located 130 miles by rail from the pulp mill, by-product wood of this 650M per day sawmill is converted into pulp chips, loaded into rail cars and shipped to Springfield for manufacture into pulp. At North Bend a hydraulic barker removes bark from logs as they enter the sawmill, thus making a maximum amount of the residue wood suitable for chipping with but minimum additional processing.

The plywood plant, rated at 3,700,000 sq. ft. per month, contributes its residue wood to Pulp Division, including veneer trims, peeler cores, peeler log trims and blocks unsuited for manufacture into plywood.

Utilization of local forest wood has been furthered by adding a steam-operated log splitter, manufactured by Salem Iron Works, which reduces 4 ft. (or shorter) blocks to small segments which are processed in the plant's drum barker and chipper originally installed for processing farmer wood. Addition of the splitter makes practical the utilization of lower grade logs that can't economically be put through the headrig. Also, trims from plywood peeler logs now go to the splitter for processing as pulpwood.

The Springfield pulp mill, inaugurated in 1949 with production rating of 150 tons per day—originally covered in Nov. 1949 issue of PULP & PAPER—was upped to 250 tons per day in 1951. Chief components added at that time include two digesters, a recovery furnace, a washer, one line of evaporators, a mud washer and green dregs washer.

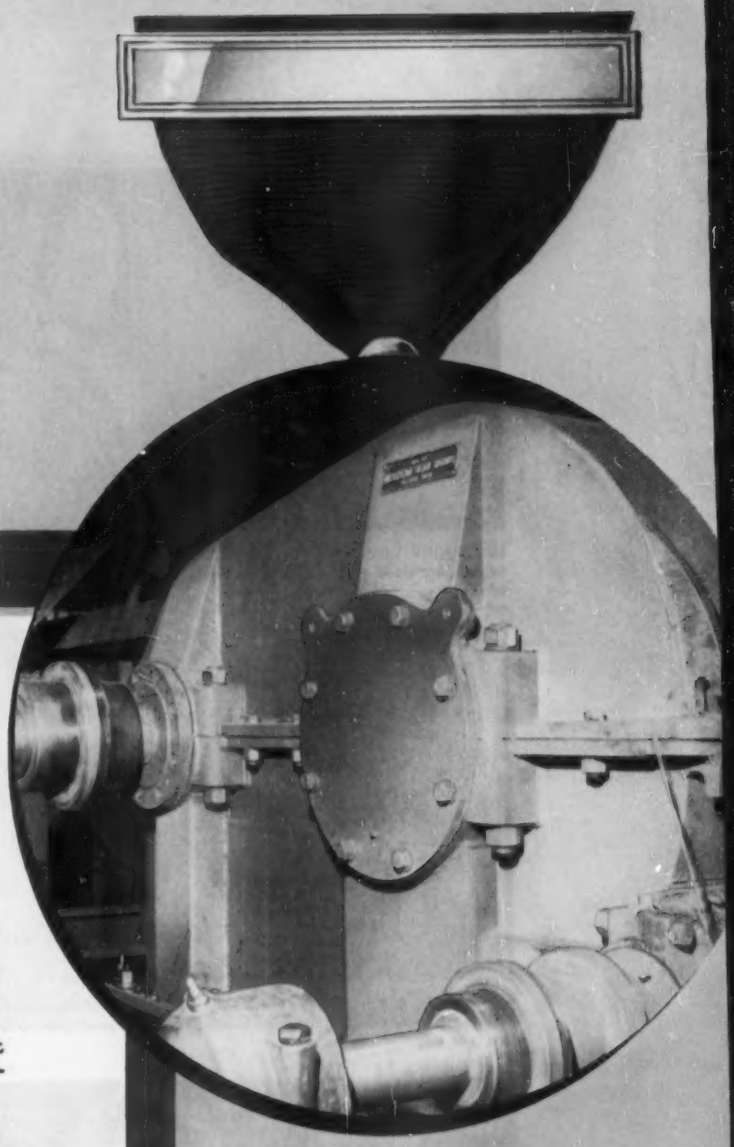
This mill produces containerboard for manufacture into shipping containers by converters. Springfield machine speeds range from 700 to 1200 fpm and weight from 26 to 69 lbs. per 1,000 sq. ft.

The recent project was completed with only two weeks work stoppage. It increased production to 350 tons, included major enlargement of machine, machine room, addition of two digesters, second lime kiln, another Chicago Bridge blowtank and Fibre Making Processes blow steam heat recovery system, chip storage, Hydraulic Supply Co. evaporators—duplicate of those installed two years ago—Impco high-density stock storage system, doubling of saltcake storage, three new E. D. Jones Majestic jordans and Dilts Hydrafiner.

Three bays have been added to the machine room which is now 592 ft. long. In enlarging the Rice Barton machine, wire length was increased from 103 to 134 ft. and thirty 60-in. diameter drying rolls and 8 felt dryer rolls were added as a third section. Early in the machine expansion project, the calender and reel were removed from their position at end of dryer section and reinstalled at their new operating posi-

## WESTERN GEAR SERVICE:

# "Above and Beyond the Call of Duty"



[redacted]

December 11, 1953

Mr. C. Harshberger
Pacific Coast Gear Products Inc.
930 Southeast Oak Street
Portland 14, Oregon

Dear Mr. Harshberger:

Quite occasionally in our business careers we have experiences which were they to occur in the military field of endeavor would be characterized by the statement "above and beyond the call of duty." One such experience has recently occurred in the production and delivery of the special reduction gear which we ordered through you on November 17, 1953. You advised us that you thought this gear could be delivered in three weeks or thereabouts, and we gave you the "go ahead" on the equipment on the afternoon of the 17th, advising you that the paper machine drive to which this gear was to be applied was on its last legs and we were very fearful that it would not last until we got the new gear. We asked you to work all the overtime that your people could humanly accomplish in order to deliver the gear to us at the earliest possible moment.

On the morning of December 7th, just one day lacking three weeks from the time of order, the drive on No. 2 Machine gave every evidence of early demise. Western Gear was fortunately able to ship the gear at noon on Monday; it arrived here at six that evening and was installed and operating about 24 hours later. The equipment taken out was, indeed, on its last legs, and I am sure it would not have run another 24 hours.

[redacted] is sincerely appreciative of the very fine cooperation in design and production of this unit, and we would like all those who had a hand in doing such a superlative job for us to know that this experience, related here in some detail, is one that deserves the "medal of honor."

I am glad to say that the installation difficulties which worried us for a day after the startup seem to be ironing out, and we are confident that this gear will serve us for a long period of time.

Again many thanks to all concerned and with kindest regards, I am

Sincerely yours,

[redacted]

** letter in our files—name upon request*

**WESTERN GEAR WORKS PORTLAND OFFICE.*

## WESTERN GEAR WORKS

like to receive letters from customers—*especially* letters like *this one* from a major Pacific-Northwest industry. We don't wish to boast but with this letter in mind we'd like to again remind you that if you have a mechanical power transmission problem we would like to be of service—remember we have a background of 66 years of experience so won't you write, wire or telephone us today?

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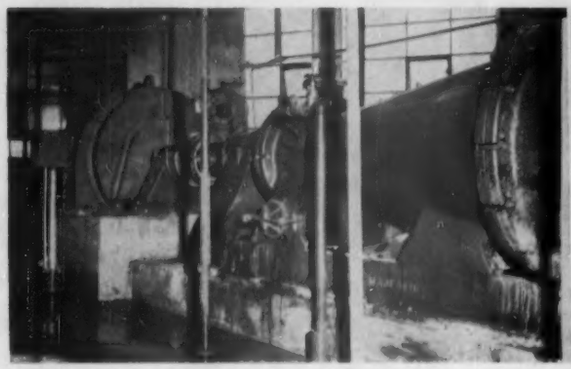
PACIFIC GEAR & TOOL WORKS · SOUTH WESTERN GEAR WORKS

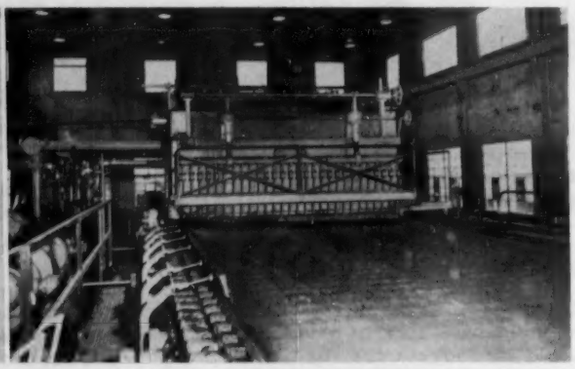
PLANTS AT LYNWOOD, PASADENA, BELMONT, SAN FRANCISCO (CALIF.)
SEATTLE AND HOUSTON — REPRESENTATIVES IN PRINCIPAL CITIES

MEZZANINE VIEW of A. O. SMITH digester and top of ESCO heat exchanger. Good record of old digesters was used as guide for this addition.

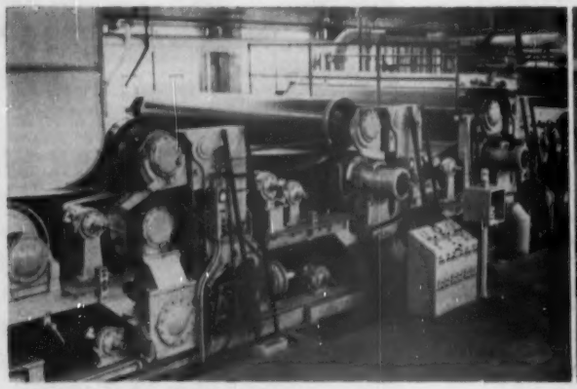
PULP DISCHARGING to new 100-ton IMPCO equipped high-density stock storage chest from AMERICAN RUBBER Manufacturing Co. conveyor belt.



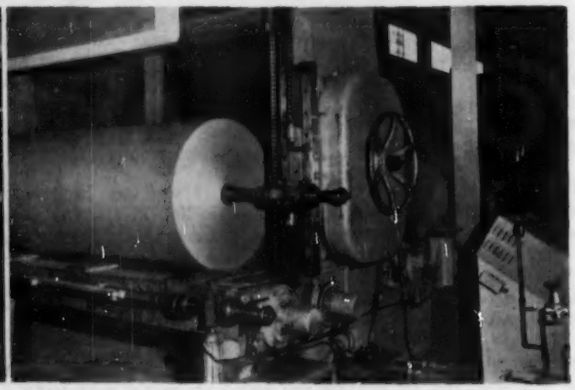
E. D. JONES & SONS Majestic jordan, one of three added (making a total of 8) in bringing Weyerhaeuser Springfield production to 350 tons per day.



VALLEY IRON WORKS primary headbox discharging stock to RICE BARTON Fourdrinier which was lengthened from 103 ft. to 134 ft. wire.



GRIFFITH RUBBER MILLS supplied these new type rubber covered press rolls in top position of all three presses of RICE BARTON machine.



HEAVY DUTY RICE BARTON winder of 152 in. trim and 72 in. maximum diameter rolls, installed at back end of machine room addition.

## PICTURE TOUR OF ADDITIONS AT WEYERHAEUSER KRAFT MILL, SPRINGFIELD, OREGON

tion near end of the machine room extension.

Although dry end of machine and calender-reel were some 140 ft. apart, improvizations enabled continuance of production. The sheet was carried between dryer section and reel above operating floor on dryer felt while foundation work progressed underneath. Then, on completing foundation construction, the carrier felt was routed from the machine down into the basement, transporting sheet beneath area of third section to calender and reel while machine erection continued above.

According to William Pittam, plant engineer in charge of design and construction of the expansion project, very little loss of production resulted, the effectiveness of this sheet transport innovation contributing materially to that end.

As part of the expansion program, new type rubber-covered press rolls have been installed on the machine in the top position of all three presses. According to Manager Julson, the sheet doesn't tend to follow

# Watch how the **COLORED** tissue sells!

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Color takes tissue items that used to be standard "look-alike" necessities and makes them attractive, distinctive *accessories*. The results are greater use of tissue, larger purchases, more retail sales.

Perk up the shelf appearance of all your tissue products with color. Call on Du Pont's technical service staff for help in choosing the right color and method of application. Get full information by writing to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

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"PONTAMINE" FAST ORANGE WS Conc. 175%
"PONTAMINE" SKY BLUE 6BX Conc. 150%

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***Color sells more . . .***
***for your customers and you***

*Du Pont Dyes*

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

KEY PLANT PERSONNEL at Springfield include (l to r): MAURICE MURRAY, Paper Mill Supt.; G. C. ARCHER, Recovery Foreman; WALTER D. WATT, Master Mechanic; A. F. WELEBER, Chief Electrician; ROY POTTER, Instrument Foreman; OLIVER MORGAN, Acting Technical Director; DONALD ALLEN, Acting Chief Chemist.

the top rolls and the rolls can run without doctors; it is now easier to feed sheet through the press section and an increase in felt life has been noted. Springfield was the first user of these new "self-doctoring topress rolls," manufactured by Griffith Rubber Mills.

Other machine room changes include pressurizing Valley Iron Works headbox, replacing of former winder with heavy duty Rice Barton unit with capacity for 152 in. trim and 72 in. diameter rolls; addition of three Jones Majestic jordans, a Shartle Hydrafiner, an American Elevator Co. elevator, 20,000 gpm Ingersoll-Rand fan pump, size preparation bay, additional condensate removal equipment furnished by Midwest Fulton, Nash vacuum pumps, and extending the Westinghouse machine drive.

J. O. JULSON, Manager of Springfield, Ore., Pulp - Paper operations for Weyerhaeuser.

JOSEPH C. BROWN, JR. (left), Pulp Superintendent, and WILLIAM PITTAM (right), Plant Engineer, had much to do with Springfield expansion.

In enlarging the digester building and increasing digester facilities, effort has been made by the manufacturers to achieve longer digester life. An attempt was made to duplicate the kraft digesters of some 25 years ago which withstood 10 to 15 years service. The two digesters installed—one an A. O. Smith Corp. unit and the other, Chicago Bridge, both with stainless steel-lined cones and Esco heat exchangers and circulating systems—were built to specifications the respective builders consider most likely to accomplish the objective.

Stebbins Engineering Co. did ceramic work on the lengthened wire pit, L. H. Hoffman was general contractor on the expansion project, and Drew Engineering extended machine hood and ventilating system.

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**LESS DOWN-TIME.** Industry finds that Fast's Couplings, the original gear type coupling, give trouble-free performance. They save on maintenance. Save money (often thousands of dollars in production losses) year in, year out, because there is no down-time due to breakage . . . no expense of replacing perishable parts.

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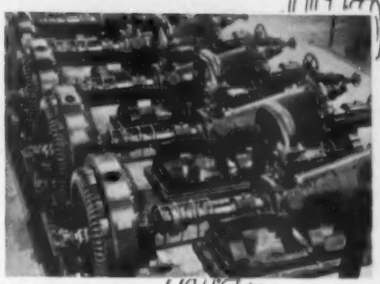
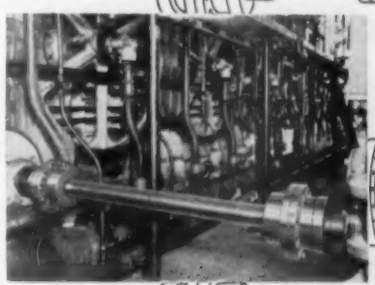
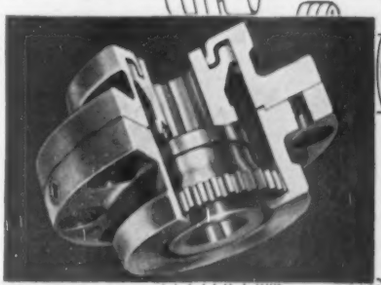
**FREE ENGINEERING SERVICE.** The same "Know-how" that goes into the manufacture of famous Fast's Couplings . . . that has resulted in over three-fourths of a million successful installations . . . applies to its extensive engineering service. 35 years of experience in developing the most satisfactory materials and designs, means our staff is well prepared to give you the most effective and cost-saving solutions to your coupling problems. Just outline and send them to Koppers for assistance. And send for free catalog. Just mail the coupon below.



Fast's Jordan-type Coupling in a leading paper mill.



Fast's floating shaft Coupling paper mill installation.



Cutaway view of typical Fast's Coupling. Note unique design.

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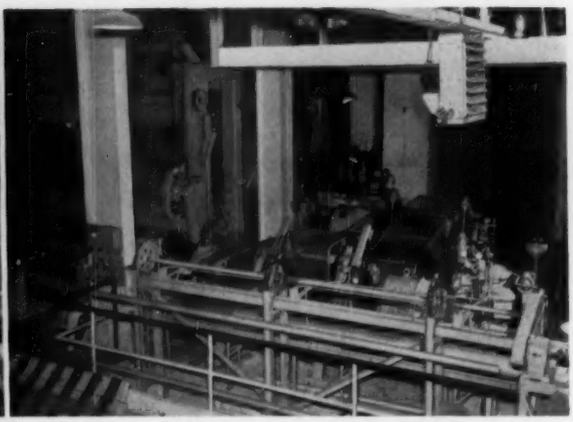
**COUNTER ROLL REWINDER AT CROSSETT**

This rewinder handles 17-ton mill roll to produce 9-in. counter rolls at 4,000 fpm. Designed and built by Beloit Iron Works specifically for this application at Crossett Paper Mills, Crossett, Ark. Control station is shown at left.



**CLOSE-UP OF ELECTRICAL-MECHANICAL DRIVE**

Excellent view of combination electrical-mechanical drive designed for Beloit rewinder by Reliance Electric & Engineering Co., in collaboration with Crossett and Beloit engineers. Noteworthy operational features include rapid acceleration, deceleration and roll handling.

# Counter Rolls Are Wound At Low Cost by Direct Method

**By O. L. Calhoun**
**Chief Electrician**
**Crossett Paper Mills**

AFTER OVER a year and a half of operation, Crossett's experience with its full reel Beloit counter roll winder has been that of the greatest efficiency and lowest cost in the mill's 16-year history as a supplier of kraft wrapping paper for retail merchants.

The new winder has speeded up the operation substantially, resulting in reassignment of mill employes to other equally essential processing tasks.

Prior to this installation normal mill practice involved rewinding the big reel to smaller rolls for easier handling. At Crossett, with the new winder, the 17-ton reel is transferred directly from the machine for counter roll making, eliminating one production step and minimizing the roll changing frequency factor. The installation meets all requirements of automatic high speed operation.

The two-drum winder was specially designed and built for this application by Beloit Iron Works, and its drive was also custom-designed and tailor-engineered by the Reliance Electric & Engineering Co., working in close collaboration with engineers of Beloit and Crossett.

On this installation, kraft counter rolls of paper ranging from 20 to 90 lbs. basis weight are wound at a web speed up to 4000 fpm, with a threading speed of 50 fpm. The reels are 88 in. diameter and 200 in. wide. From the unwind stand, paper is fed through a set of shear type slitters to trim slit its edges, afterwards rewound into finished 9-in. diameter counter rolls. Counter rolls are wound in sets, the number depending upon knives in the rider roll assembly.

Design of electrical units in the integrated mechanical-electrical drive for the two-drum winder was predicated principally on severe duty cycles this equipment must meet. Complete control of the entire winding operation is electrical.

The unwind stand, consisting of multiple tapes driving the unwind mill reel, is powered by a forced ventilated 150 hp motor capable of carrying 200% load over a considerable portion of its duty cycle. It accelerates and decelerates the unwind stand—the lead section of the drive—and provides regenerative feed back to maintain tension.

Rewinder drums are driven individually each through a parallel shaft reducer by forced ventilated 75 hp motors, designed to provide proper load distribution between the drums. Desired speed relationship is further assured by addition of a V-belt drive with vari-pitch sheave arrangement.

Two 10 hp motors electrically connected in series for equal load sharing drive the rider roll. Their speed or torque is maintained by a separate, manually controlled booster generator. The booster generator for the two ¾ hp trim edge slitter motors insures their speed at somewhat greater than the web under all conditions.

The two winder motors, reel spool of the unwind stand, and the unwind tape drive are all served by air brakes. Applied during deceleration of the winder, they absorb a portion of the stored energy in the winder, the remainder being absorbed by the electrical system, thereby shortening

Author O. L. Calhoun describes Crossett's operation of full reel counter roll winder.

## *A SEQUEL TO OUR REPORTS ON NEW COUNTER ROLL WINDER*

**In its issue of Feb. 1953, *PULP & PAPER* called attention in an exclusive story to the operation by Crossett Paper Mills, Crossett, Ark., of a new large winder that accepted reels direct from the machine for turning into counter rolls. Principal features of this installation, which could spin a 17-ton reel (initial weight) up to 4,000 fpm web speed and back to zero in 40 seconds, were given.**

**Now, after more than a year's full operation, O. L. Calhoun, Crossett's chief electrician, furnishes more detail of this unusual equipment in the accompanying article.**


*Exclusive* **Nose Baffle**

**Keeps B&W Recovery Units**

# ON THE LINE LONGER

**Forced outages and down time are expensive in terms of both lost production and costs involved in getting recovery units back on the line. Keeping those costly, non-productive periods few and far between,—to clean and remove smelt deposits—is the job of the NOSE BAFFLE found *exclusively* in B&W Recovery Units.**

**PROBLEM**—How to shield the ash deposits on the superheater from the radiant heat of the furnace, and direct the flow of high-temperature gas from the furnace so that all of the gas is cooled to the same degree before entering the superheater. The function of the Nose Baffle is to solve this problem.

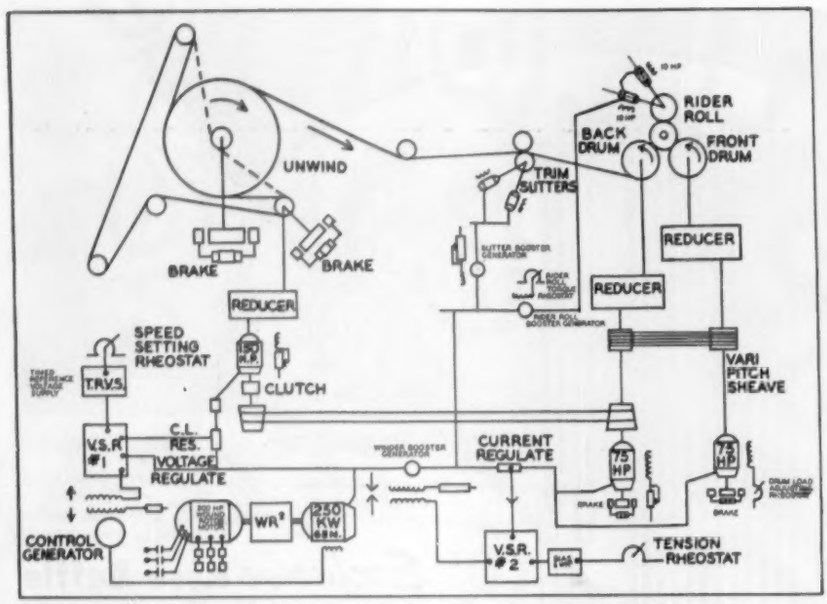
**RESULT**—Through the use of the B&W Nose Baffle, ash deposits in zone where superheater tubes are closely spaced are soft, powdery and easily removed. The B&W Nose Baffle cuts frequent, difficult cleaning to the minimum and completely eliminates cleaning outages. Lower operating cost may be realized from lower temperatures, improved cleaning and continuous operation. The B&W Unit stays on the line longer.

**And high availability is one of the many benefits of a B&W Recovery Unit. For nearly 20 years B&W Recovery Units have demonstrated economical operation and high availability in leading pulp and paper mills. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.**

P-786

**BABCOCK & WILCOX**

BOILER DIVISION




**SCHEMATIC DIAGRAM OF CROSSETT WINDER**

This schematic diagram of Crossett's 2-drum winder with surface unwind shows principal elements of combination electrical-mechanical drive powering unit.

the stopping period and decreasing the total cycle time per set of counter rolls.

### 3 Unit Main Generator

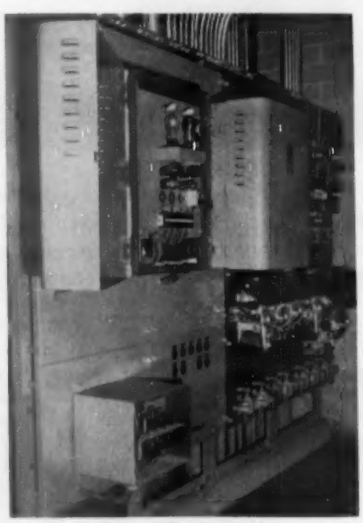
The main motor-generator set is a three-unit assembly mounted on a common base. It consists of a 300 hp wound rotor induction motor—the prime mover—which has a 900-1500 rpm speed range with 1200 rpm synchronous speed; a flywheel mounted in its own pedestal bearings, used to limited peak electrical demand to the equivalent of 500 hp; and a 250 kw variable voltage dc generator.

The main generator, with a capacity of 250-volts at 900 rpm, commutates 200% overload for considerable portions of the duty cycle at any speed from 900 to 1500 rpm. The flywheel, specially designed for this application by Reliance engineers, is 5 ft. in diameter and weighs approximately 5 tons. It has been designed to operate with a surface speed above 250 miles per hour. The motor, generator and flywheel have two split-sleeve bearings each and are connected with flexible couplings.

During acceleration of the winder, the m-g set with a 1200 rpm synchronous speed slows down to approximately 900 rpm so as to utilize the stored energy in the flywheel and limit the peak electrical demand on the system. Upon deceleration of the winder, the stored energy in the unit is transferred through the m-g set, thereby overspeeding it above 1200 rpm and pumping some of the energy back into the system and storing some of the energy in the flywheel due to the overspeed.

The auxiliary m-g set for the drive is a six-unit m-g set, which consists of a 50 hp squirrel cage drive motor and booster generators for the winder, rider roll, slitter, control and main exciter. Units of this set are mounted on a common base and are equipped with ball bearings and flexible couplings.

Adjustable speeds required in the winding operation are accomplished by utilizing the variable-voltage control system. The 250 kw main generator is electrically connected to the armature of the 150 hp unwind motor. Generator output is regulated with an electronic Reliance VSR Regulator, which provides pre-set speed and acceleration-deceleration rate control. This unit also incorporates current limit control for protection of equipment against excessive currents.



**DC CONTROL PANEL**

This control panel at Crossett incorporates Reliance electronic regulators for linear acceleration to pre-set speed, current limit protection and precise tension control, including proportional inertia correction.

A second Reliance VSR Regulator controls the winder booster generator, which is electrically connected between the rewind and unwind stands. This regulator, in conjunction with $WR^2$ correction, provides accurate tension control throughout the entire winding cycle, including acceleration, running, deceleration and rest.

The slitter booster generator is connected in series with the slitter motors to maintain peripheral speed of the trim slitters greater than that of the web throughout the entire speed range of the drive.

The rider roll booster generator, used on the motors of the rider roll, allows a wide range of their torque adjustment which remains set throughout the entire speed range.

The entire drive has been specifically designed and engineered to make simple automatic control the dominant operational keynote. The installation may be said in that respect to reflect the ultimate achieved to date in winding of kraft counter rolls by pushbutton control.

The operator simply pushes the "Run" button on the control panel, and the winding cycle thereafter is controlled automatically through pre-set rate acceleration with current limit over-ride protection. After the winding cycle is initiated, the winder proceeds through the required cycle, making the 9-in. counter roll and stopping automatically —without any additional attention by the operator. This automatic con-


## ...make your "SAVE-ALL" really save — in stock, water, time, labor and money.

Savings obtained through efficiency in your flotation-type "SAVE-ALL" are the kind that pay off fast, and pay off *big* because they cost you so little to realize . . . less than a cent per thousand gallons of treated water.

Swift's New Process Glue is a superior non-foaming flocculent. Used in your "SAVE-ALL", its unique colloidal action can be quickly noticed in clearer effluents. Its unusual flocking ability helps promote highest recovery of fibers and fillers.

Try Swift's New Process Glue in your "SAVE-ALL" . . . or see how it can be used for high retention of valuable clay and titanium. An informative bulletin outlining formulas, equipment and instructions for these and other uses is available to you without obligation.

Write for details and remember . . .

**ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS**

**DON'T OVERLOOK THESE OTHER IMPORTANT USES FOR NEW PROCESS GLUE**

- *For creping of facial and toilet tissues and paper napkins.*
- *For high retention of clay and titanium.*
- *For machine coating.*
- *For paper that requires high Pick test.*

Call Swift for GLUES

*Another of Swift's Products for Industry*

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Swift & Company
Adhesive Products Department
Chicago 9, Illinois

Please send your latest bulletin on Swift's New Process Glue.

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*City*_____ *Zone*____ *State*_____

*Your Name and Position*_____

trol, however, may be over-ridden manually at any time from the normal and emergency stop pushbuttons.

As indicated, the rewinder upon starting accelerates automatically at a predetermined rate to the pre-set speed called for by the speed-setting rheostat. The current limit control incorporated in the speed regulator when necessary over-rides the rate control, and in that way prevents excessive armature currents.

### *Two Automatic Limit Switches*

The winder has two automatic stop limit switches. As the counter roll builds up in diameter and nears its final size, the first limit switch is tripped by the rider roll assembly as it lifts, causing the drive to decelerate on a pre-set electrical rate supplemented by moderately regulated brake pressure. Thus, deceleration at a pre-set rate is accomplished in a similar manner to acceleration. Application of mechanical braking at a reduced pressure facilitates and shortens stopping.

Then, as the roll decelerates and more closely approaches its final desired size, a second limit switch is actuated, setting the brakes with greatly increased regulated pressure and recalibrating the rate control, bring the winder to a rapid halt. This second or final limit switch, once set, maintains the repetitive sizes of the counter rolls to the desired diameter.

This double limit switch arrangement, together with the electrical controls and air-operated brakes, were devised by Beloit and Reliance engineers to size the counter rolls more accurately and consistently, and so reduce variations which otherwise would result from the change in unwind stand inertia.

Brakes are automatically de-energized upon completion of each set of counter rolls when the rider roll is lifted away from the counter roll. They are not re-energized when the rider roll is dropped into contact with a new core. The limit switches trip in one direction only and are reset with continued motion in the same direction. As a result of this particular arrangement, brakes are automatically released before the start of the succeeding cycle.

Use of a special armature circuit in the variable-voltage speed-control system makes it possible to operate the unwind stand independently. Feed-in and slack take-up pushbuttons are available for positioning the unwind roll when the new roll has been put into place and

it is desired to feed the material into the two-drum winder and take up the slack.

The operator's panel also is equipped with "On—Off" pushbuttons to apply tension between the unwind stand and the winder. When the drive is at rest, the tension is at a value as pre-set on the control panel; when the drive is operating, the tension is as selected by the tension-adjusting rheostat mounted on the operator's panel.

Whenever the drive is changed from stall to any running condition, including jogging, stalled tension is transferred to the running tension condition. Likewise, when the winder comes to rest, run tension is transferred to stalled tension. The winder also can be jogged or operated by itself.

Operation of the rider roll and slitters is dependent upon the position of their respective selector switches. In the "On" position the rider roll operates in tandem with the rewinder drive, coming to rest with it. However, when the switch for the slitters is "On," they continue to operate even when the rewinder is at rest—their speed, as indicated earlier, always being maintained somewhat above web speed.

## New Appleton Firm

Raymond C. Max, who represented Factory Insurance Assn. of Milwaukee to Midwest and Lake States mills, is new president of Azco Fire Protection Inc., a recently organized subsidiary of Azco, Inc. Mr. Max has moved to Appleton, Wis., with his wife and two sons.

Last fall, Mr. Max gave a paper at the Tappi Engineering Conference in Montreal on fire protection. Sprinklers and other installations will be handled by his company.

## Perry Named Manager Of Neenah K-C Mill

Ted Perry, with Kimberly-Clark since graduating from U. of Wisconsin in 1931, has been appointed new manager of the Neenah, Wis., mill, succeeding Sprig Werling.

Clark Hook succeeds Mr. Perry as superintendent of K-C's No. 2 mill in Niagara Falls, N.Y. Mr. Hook is a U. of Minnesota grad and production supt. at the Cellucotton subsidiary in Niagara Falls, Ont.

## Benson Dies

Bernard Benson, one of the veteran members of the Williams-Gray mill supply firm of Chicago, died May 2 at his Elkhart, Ind., home. He traveled for Williams-Gray for over 30 years, but recently was inactive.

## Why Not a Pulp and Paper Stamp?

THERE'S A CHANCE that the pulp and paper industry may be considered for a tribute on a new U.S. postage stamp. The publicity would be almost priceless. PULP & PAPER magazine has written to the Postmaster General urging this. It had been reported that several U.S. industries might be honored on a new stamp series to replace the Presidential series of 1938.

Below is a letter promising consideration for pulp and paper, though it does not hold much hope out, at present.

### WRITE THE POSTMASTER GENERAL!

The exclusive report carried on PULP & PAPER's editorial page in April—that the U. S. Government is considering a series of new stamps to honor leading American industries—was reprinted in the American Paper & Pulp Association's *News Summary* and also in the publication *Celluletter.*

An authority on stamps originally tipped off PULP & PAPER on the plan. We confirmed the tip through the Postmaster General.

PULP & PAPER urged that its readers should write the Postmaster General requesting that pulp and paper be one of the industries so honored. APPA in its *News Summary* and *Celluletter* both echoed this suggestion.

We have since learned from authoritative sources that pulp and paper is *NOT* one of the industries *presently* on the tentative "honor list."

As the 5th largest industry, pulp and paper certainly should be included. If you agree, write the P.G. your views!

Time is of the essence!

Feb. 19, 1954

Mr. Albert W. Wilson,
Editor, PULP & PAPER,
Dear Mr. Wilson,

"We have read with much interest the article appearing in the February edition of your magazine PULP & PAPER, by Berwyn B. Thomas, entitled *Postage Stamps Tell Forest Industries Importance.*

"We fully agree with Mr. Thomas that postage stamps offer a splendid medium to commemorate important events. The illustrations of stamps in the article written by him showing trees around the world are very interesting. The Post Office Department has issued stamps covering many categories, such as Famous Americans, historical events, important industries, and others depicting our national scenery.

"At the present time we are considering the replacing of our ordinary series of stamps with new subject matter. Much work has been done in connection with it and we hope to make some announcement soon about our definite plans. We are glad to know about the pulp and paper industry and the largeness of this business. It is unlikely that a stamp for this industry can be included in our program at this time but *your request will be kept in mind for consideration at some future time.*

"We have asked the Bureau of Engraving and Printing to look into the possibility of having stamps made by a multiple color photogravure printing method (rather than the old engraving process). We are exploring the situation at this time but nothing definite has been decided to date.

"Sincerely yours,
Albert J. Robertson
(signed)
Asst. Postmaster General"

# How to step-up screening efficiency

Look at the perforations in these screen plates. The holes are round. The edges smooth.

*And they'll stay that way a good, long time.*

You can be sure of that because the plates are made of Monel and Inconel.

These metals never rust. They resist corrosion caused by acid and alkaline stocks and solutions. They're strong and tough. They resist abrasive wear.

Consider the experience of Crown Zellerbach Corp., West Linn, Oregon . . .

They had several problems. Short screen plate life was one. And inconsistent quality of book groundwood another.

Plates were corroding beyond use in less than 5 months. And screening efficiency, of course, dropped as the plates got older, and corrosion bit into the perforations.

In the search for plates that would give them better screening, the mill tried several made of Inconel. These were fabricated by Charles Mundt & Sons, Jersey City, N. J., a company with more than 84 years of experience in the production of perforated metals for industry.

These Inconel plates turned in an amazing performance. So the mill bought more, bringing the total to 40. *Not one gave less than 16 months of continuous service, nine were on the job at least 25 months, and some lasted more than three years without any measurable enlargement of the perforations.*

Keep this story in mind. And the next time *you* need screen plates, switch to Monel or Inconel. You'll never regret it.

**THE INTERNATIONAL NICKEL COMPANY, INC.**
67 Wall Street New York 5, N. Y.

**Here are five** selections from a large line of stock patterns available in corrosion-resisting Monel and Inconel screens. The fabricator, Charles Mundt & Sons, Dept. M, Jersey City 4, N. J., will be glad to send you a complete catalog.

## Inco Nickel Alloys

Monel® • "R"® Monel • "K"® Monel • "KR"® Monel • "S"® Monel
Inconel® • Inconel "X"® • Inconel "W"® • Incoloy®
Nimonic® Alloys • Nickel • Low Carbon Nickel • Duranickel®

## EQUIPMENT and SUPPLY CO. NEWS

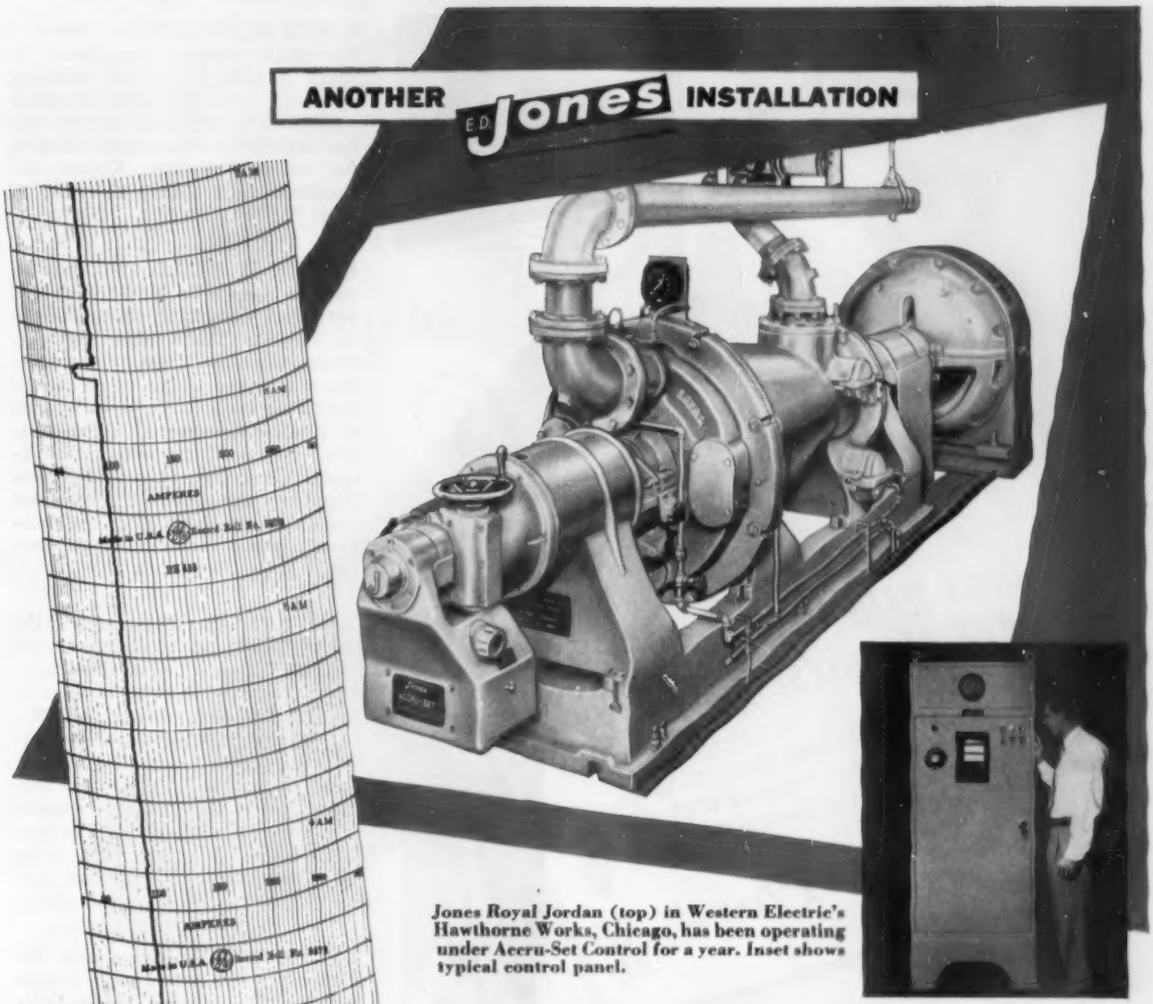
*COCHRANE CORP.*, water conditioning equipment manufacturers, have released publication 4505-A describing Zeo-Flo Sodium Zeolite Softener, a water softener for small and medium size industrial plants. It provides a custom engineered unit at practically stock costs, according to the company, and the softener has been simplified for ready handling by small or medium plant facilities. Advantages claimed are lower cost, easy installation, minimum piping requirements, ease of operation and low chemical costs. Write to Cochrane Corp., Phila. 32, Pa.

*OAKITE PRODUCTS, INC.* announces a new cleaning material, Oakite Composition No. 93, for use in steam-generating equipment and in steam guns where the solution is siphoned from an auxiliary tank. The material meets Federal specification—Steam Cleaner (tentative)—P-S-00751(G.S.A.-F.S.S.). It is a white, free-flowing powder. Additional information from Oakite Products, Inc., 1001 E. First St., Los Angeles, Calif.

*GENERAL ELECTRIC CO.* offers two bulletins on completely electrified log-carriage drives with amplidyne control. GEA-5786, an 8 page two-color publication, describes log-carriage drive operations, advantages, maintenance and operating cost. GEA-5992 contains four pages of detailed information on speed variator amplidyne-controlled log-carriage drives.

*ATLAS MINERAL PRODUCTS CO.* announces availability of an elastic maintenance coating for light duty corrosion service. This product, which eliminates compounding on the job, is available as gray or black colors in standard containers. The material, which is sold under the registered trade name of Elprene, is based on a joint development by Du Pont and Atlas.

*AMERICAN CYANAMID's* manufacturers chemicals department has published *"The Chemistry of Melamine,"* a comprehensive text including sections on applications, specifications, physical properties, chemistry and structure, toxicity, test methods and a bibliography. For copy of the 56-page booklet, write Manufacturers Chemicals Department, American Cyanamid, 30 Rockefeller Plaza, New York 20. Lab samples are available.




Jones Royal Jordan (top) in Western Electric's Hawthorne Works, Chicago, has been operating under Accru-Set Control for a year. Inset shows typical control panel.



This watt-meter chart shows uniformity of Jordan performance with Accru-Set Control.

# ACCRU-SET® Automatic Control makes this Jordan walk a chalk-line

In mill after mill, Accru-Set has demonstrated its ability to maintain uniform performance at maximum efficiency — with a savings in operating horsepower — on every type of conical refining and Jordanning machine. Completely automatic control panel can be located anywhere; continuous record of every run permits exact duplication.

Ask your Jones representative for details or write today for our new Bulletin No. 1101.

E.D. Jones

E. D. JONES & SONS CO. • PITTSFIELD, MASS.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

*JOHNS-MANVILLE* has issued a four-page booklet describing its metal Raschig Rings and providing data for engineering firms designing and constructing new towers and for engineers who specify packing for existing towers. Copies are available from Johns-Manville, 22 E. 40 St., N.Y. 16.

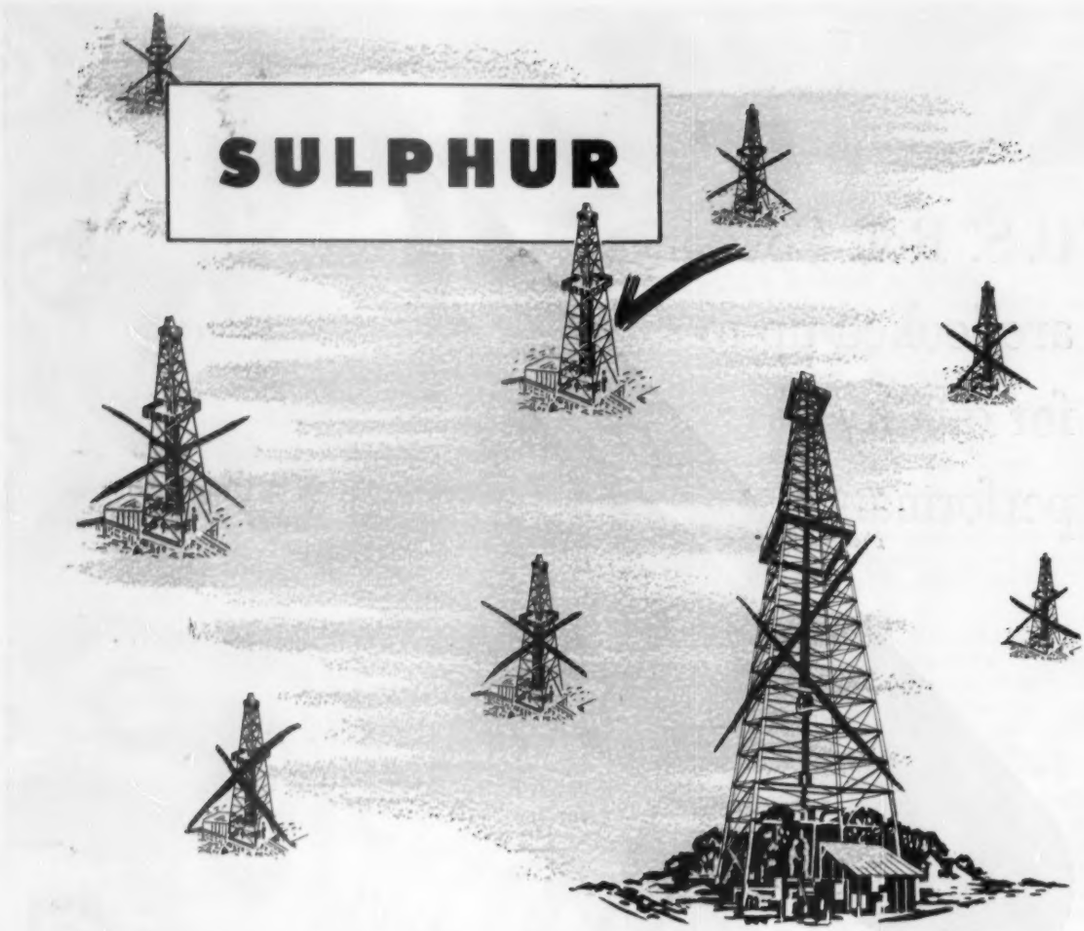
*FOSTER D. SNELL, INC.* has issued an 8-page booklet, "Analytical Services," describing their analytical services. The booklet also discusses analytical research, undertaken in cases where there are no published methods. New techniques of Spectrophotometry, Spectrography, Flame Photometry, Polaragraphy, Chromatography and Radiochemistry are generally employed. Copies are available from the company's public relations department, 29 W. 15 St., New York 11.

*THEW SHOVEL CO.* announced the 5000th machine in the famous Lorain "TL" Series has rolled off the assembly line at its plant in Lorain, O. Number 5000 is the new model MC-104 Moto-Crane, developed and introduced recently in the ⅜-yd. class. This series also includes machines of ½-yd. and the popular ¾-yd. classes. 84% of the last 3000 "TL" Series machines built were ¾-yd. machines. Of the last 1500 built, 86% were ¾-yd. machines.

*THE DORR CO.* announces the availability of a new 4-page, 2-color bulletin, "The Dorrco Hydro-Softener." It includes a description of the physical characteristics, sizes and capacities, operation, advantages and applications of this new continuous water softener and cites operating data from a municipal installation. Write to the company, Stamford, Conn., for bulletin No.

*LINK BELT CO.*, Chicago, has published a new 88-page Silent Chain Book, containing detailed engineering data. This book, No. 2425, is one of the most comprehensive books developed on this subject; write for it to Link-Belt Co., 307 N. Michigan Ave., Chicago 1.

*FISCHER & PORTER CO.* announces an improved automatic system for varying the number of pumps needed to satisfy fluctuating demands in multiple pump installations. Catalog #91-106 describes and illustrates this system; copies are available from the company, Hatboro, Pa.




# . . . producing Dome Sulphur is a *Chancey* business

"What is the cost?," is a constant and persistent query in the minds of managers whether operating a manufacturing plant or a mine.

When erecting a manufacturing plant the manager selects his location in regard to transportation of raw materials to the plant and distribution of the finished goods. On the other hand, a mine is found where nature has placed the ore and production must be in that locality.

In the case of production of sulphur by the Frasch Process, the ore lies 500 to 2500 feet below the earth's surface where nature made the underground formation. No engineer can see producing conditions.

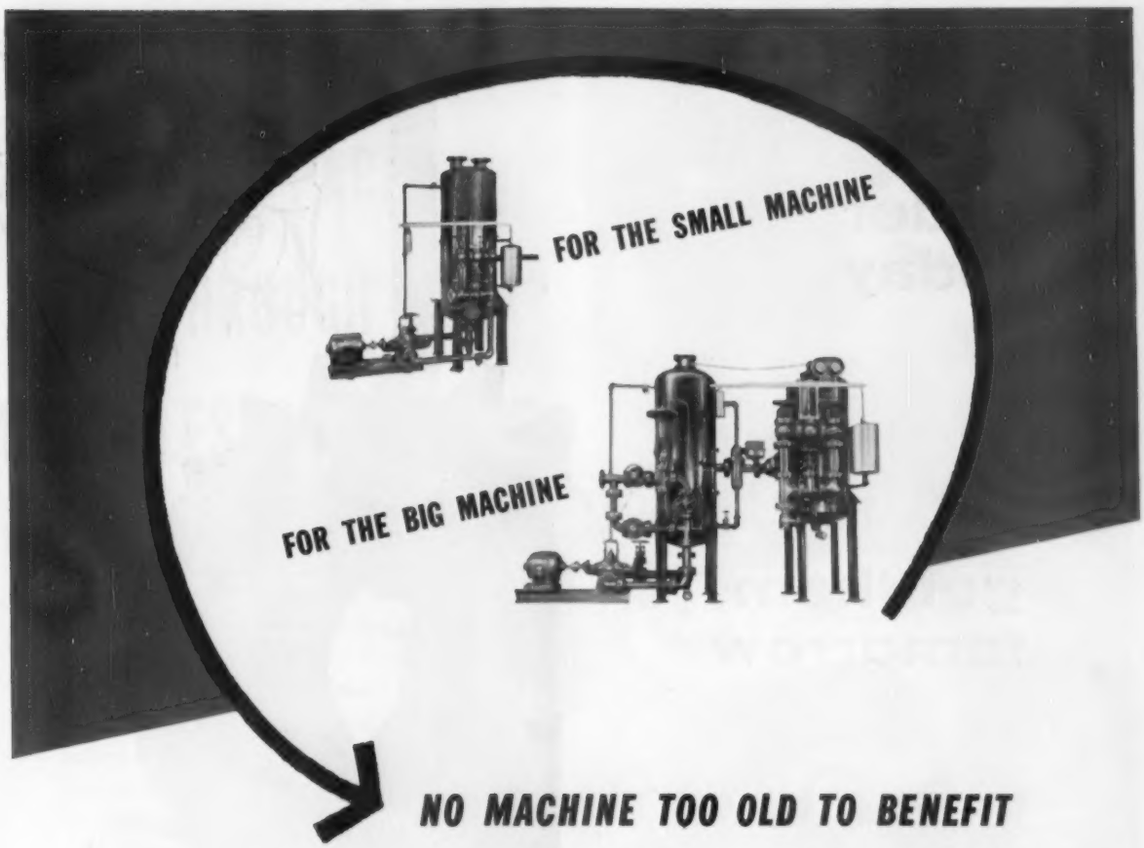
Because of variations in formations, some sulphur mines produce efficiently and cheaply. Cost of production and marketing compared with the price determines whether the sulphur is commercially available.

**Texas Gulf Sulphur Co.**

75 East 45th Street, New York 17, N. Y.

*Sulphur Producing Units*

- NEWGULF, TEXAS
- MOSS BLUFF, TEXAS
- SPINDLETOP, TEXAS
- WORLAND, WYOMING




## NO MACHINE TOO OLD TO BENEFIT

The record shows that Fulton Dryer Drainage is standard equipment with all paper machine designers. They don't build them without it any more.

The record also shows operators of older machines and smaller machines fast stepping up their dryers—installing Fulton Dryer Drainage to obtain faster drying, more uniform drying—reduce shrinkage, cockle or curl—and to reduce their steam costs. No machine is too old or too small to benefit.

Investment—less than you think . . . Write—get the facts—now!

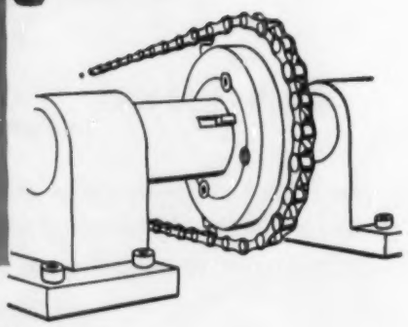
**THE MIDWEST-FULTON MACHINE CO.**
**918 WOODLEY AVENUE • DAYTON, OHIO**

**FDD FULTON DRYER DRAINAGE**

# order today

# get them tomorrow

# installed minutes later



Yes, the quick, off-the-shelf service on Rex Sprockets with Taper-Lock Bushings is that fast. Phone today, and sprockets are on their way to you. No time-wasting, cost-adding reboring, keyseating or setscrews required.

And you install them in a matter of minutes! Just assemble sprocket and bushing and lock them on the shaft. Setscrews force bushing in tapered bore of sprocket...causing it to clamp tightly onto shaft. It's just as easy to remove them. You save money, too! Rex Sprockets with Taper-Lock Bushings generally cost less than ordinary Type "B" Sprockets rebored with keyway and setscrew.

When you need quick delivery on sprockets, call your local Chain Belt Company Distributor. He's listed in your classified directory.

**CHAIN BELT COMPANY**

Roller Chain Division, 306 Plainfield St., Springfield 2, Mass.
District Sales Offices and Distributors in all principal cities

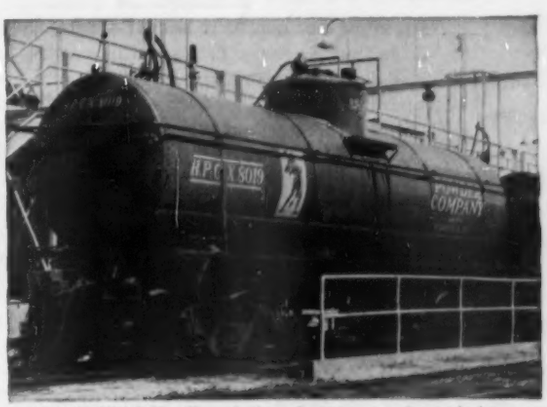
# BETTER PAPER THROUGH HERCULES CHEMICALS

There are many good reasons why mills everywhere are turning to Hercules Pexol®. This properly balanced fortified size brings reductions in size furnish . . . often as much as 30 to 50%! It saves size costs! It reduces inventories! It cuts freight and handling costs! And with all these advantages, sizing tests are maintained—often improved.

If you are one of the few who are not using Pexol, it will pay you to get in touch with your local Hercules technical representative now.

**LEAKPROOF PACKAGES**—Milk carton stock is just one of the increasing uses for Pexol in improving the serviceability of paper products. Hercules technical staff is at your disposal on problems of improving sizing and lowering costs.


**RESEARCH FOR YOU**—Center of Hercules research, development, and testing of sizing materials and other chemicals for paper is at Wilmington, Delaware. We welcome the opportunity of using these facilities to help improve your processing or finished products.



**PROMPT SERVICE**—Hercules' production capacity and the strategic location of the company's eight plants devoted to papermaking chemicals assure you of the right materials in the right quantity when and where you want them.

*Paper Makers Chemical Department*

*HERCULES POWDER COMPANY*

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*965 King Street, Wilmington 99, Delaware*

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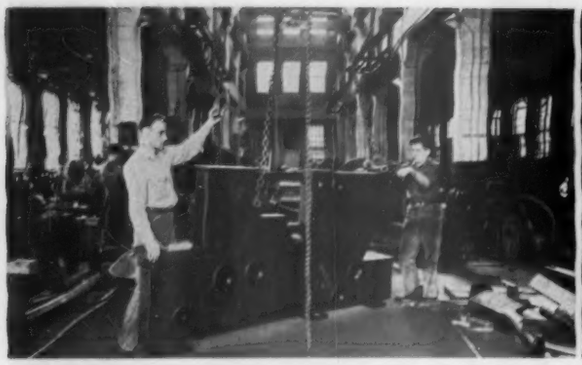


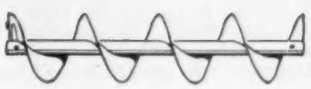
## STRESSING THE HUMAN FACTOR

HELPING to show that American industry does not forget the importance of the individual in the manufacture of a product, Eastwood-Nealley Corp. of Belleville, N. J., is emphasizing the people who help make E-N Fourdrinier wires in a series of advertisements and publications.

Recently published is a booklet entitled "Fourdrinier Wires and the Human Factor," which gives much credit to the individual men—and women—"behind Eastwood wires." According to Al Nyitray, sales manager, such tribute to the human factor not only gives E-N customers an idea of the skill and experience that go into the making of Eastwood wires, but contributes to the efficiency of industry and the strength of our country.

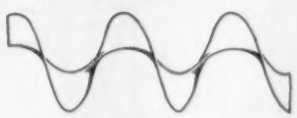
Shown above are two typical illustrations from the Eastwood-Nealley booklet: (left) Joseph Zigo and Frank Hunt hoist an end section of new high-speed loom in the E-N machine shop; (right) Muriel Abrash does some checking in the modern, completely-equipped laboratory.

# See why Link-Belt screw conveyors are 8 ways better



**1. LOOK FOR UNIFORMITY OF PITCH**

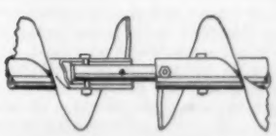
Specialized modern machinery assures accurate forming, producing uniform flighting curvature.



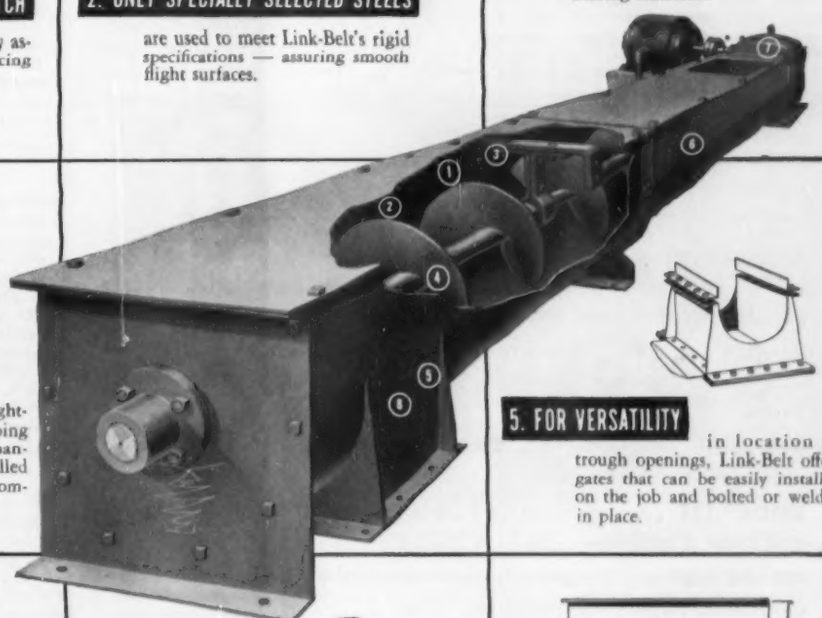
**2. ONLY SPECIALLY SELECTED STEELS**

are used to meet Link-Belt's rigid specifications — assuring smooth flight surfaces.

**3. HERE'S A WIDE RANGE** of hanger styles and mountings with various bearing materials.

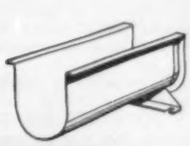


**4. FOR YOUR PROTECTION** straightness is checked before shipping and extra care is taken in handling and loading. Jig-drilled coupling bolt holes assure complete and easy assembly.

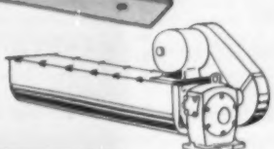




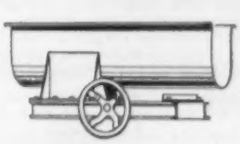

**5. FOR VERSATILITY** in location of trough openings, Link-Belt offers gates that can be easily installed on the job and bolted or welded in place.



**6. YOU'LL DISCOVER** that troughs are accurately fabricated to assure better fit of all components. Link-Belt offers a choice of metals to fit your particular application.



**7. ONLY LINK-BELT** builds a complete integrated line of gear and chain drives, couplings, bearings. One proved source . . . one undivided responsibility.



**8. YOUR CHOICE** of fixed or detachable plain discharge spouts or gates. Flat or curved slide type gates can be hand or rack-and-pinion operated.

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**SCREW CONVEYORS**

**These are only a few of the many important differences in screw conveyors. Ask your Link-Belt sales representative or distributor for new 92-page Data Book 2289.**


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PULP & PAPER

ENGINEERING PROJECT PERSONAL

# What Is A Mill Architect?

## By Roderick O'Donoghue

**Consulting Engineer, New York City**

THE VAST PULP AND PAPER industry encompasses many processes and problems which are intricate and ever existent. In meeting these, mills have specialists on their staff. But there may be, and usually is, a limit to the extent an individual company will go in "rounding out" an organization. It is more economical for them to call in the services of a consulting engineer with the desired type of experience.

It is unusual to find an organization broad enough to meet all problems, so we have specialists in the manufacturing of pulp and paper, bleaching, wood procurement and preparation, cost accounting, labor relations and lastly, but not least, in the design of new mills and expansion of others.

This last type of specialist is a "mill architect" and it is his function to make preliminary plans and estimated cost of the intended project, draw detailed plans of structures and equipment installations, obtain bids on structures and equipment, and supervise construction.

His staff must consist in a well-rounded group of specialists, including those with a fine knowledge of the processes incorporated in the design.

The mill architect also aids mills in properly evaluating and solving their expansion problems. His study may introduce that "new look" and perspective which those close to the problem may not get.

RODERICK O'DONOGHUE— " . . . architect may introduce that new look and perspective those close to problem may not get . . . "

A mill architect's report in properly explaining and estimating the cost of a proposed project is often of value in financing it. The mill architect is an advisor and guide in carrying out your plans.

## Rod O'Donoghue Has Clients Abroad, Too

Roderick O'Donoghue, after 42 years, is still courting his first love—the pulp and paper industry. This time has been spent as an engineer in designing pulp and paper mills and laying out the various processes involved.

For the past 18 years his consulting engineering business has grown steadily until now it is recognized as one of the leaders in the industry, organized to design new mills, rehabilitate older ones, or aid management in process problems.

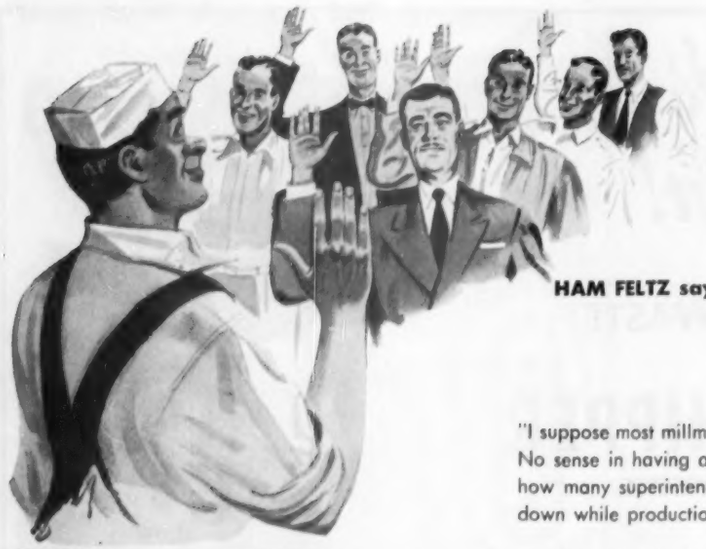
Born in New York, Mr. O'Donoghue graduated from Cooper Union in mechanical engineering and later also received his civil engineer degree.

He spent about five years with George F. Hardy, consulting engineers, another five years with Riordon Pulp & Paper Co., Hawkesbury, Ont. (now Canadian International Paper) and 15 years as assistant chief engineer of International Paper Co. in N. Y. on engineering and maintenance in all their mills in the U. S. and Canada.

Mr. O'Donoghue says these 25 years in the design, construction and maintenance of pulp and paper mills are an invaluable experience to offer his clients. His offices are at 420 Lexington, N.Y.C.


# Fourth Anniversary for Coosa River

**COOSA RIVER NEWSPRINT CO., Coosa Pines, Ala., owned by a group of newspapers and Kimberly-Clark Corp., celebrated its fourth anniversary recently with a "Community Day" open house. About 4,000 visitors saw its two 226-in. Beloit newsprint machines, and kraft and groundwood operations. Here is an exhibit of Kimberly-Clark products, many made at the Memphis K-C paper mill, lined up alongside the big enclosed kraft pulp dryer at Coosa River. It mckes 220 tons of kraft pulp, besides 250 tons groundwood and 300 tons newsprint. A. G. WAKEMAN is President. PHIL A. BACHELDER, Secy. and Asst. Treas., is its rep in Community Relations APPA activities.**



HAM FELTZ says:

"Some make their pulp of sulphite
And bleach it nice and white;

Others prefer sulphate
And find it quite all right;

But *all* the millmen tell me
Upon their solemn oath

That Hamiltons are always
The proper felts for both."

# Hamilton Felts

MIAMI WOOLEN MILLS
*Established 1858*

"I suppose most millmen have more than one source of supply for felts. No sense in having all their eggs in one basket. But it is remarkable how many superintendents *prefer* Hamilton Felts to keep drying costs down while production goes up.

"It's just possible that this preference for Hamilton Felts is because Hamiltons, with their larger open spaces between threads, let water run through faster while their thick, silky nap gives a finer finish without leaving felt marks in the sheets."

**From the thinnest tissue to the heaviest board there is a Hamilton Felt that will do your work better, faster and at lower cost.**

**SHULER & BENNINGHOFEN, HAMILTON, OHIO**

## Announcing the NEW HANCHETT

MODEL SK-24

### SLITTER KNIFE GRINDER for Top or Bottom SLITTERS WET GRIND

- *finest finishes*
- *extreme accuracy*
- *rigid construction*
- *capacity 3" to 24" diameter*
- *semi or fully automatic*
- *positive and accurate fixturing*

**HANCHETT MANUFACTURING COMPANY**

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**HARMAC BLEACHED SULPHATE**

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**The "brightness" of HARMAC pulp with the chlorine dioxide system of bleaching, and the "cleanliness" of BLOEDEL KRAFT, are features that contribute to the popularity of these products in world markets.**

**Rail and deep sea facilities at both mills.**

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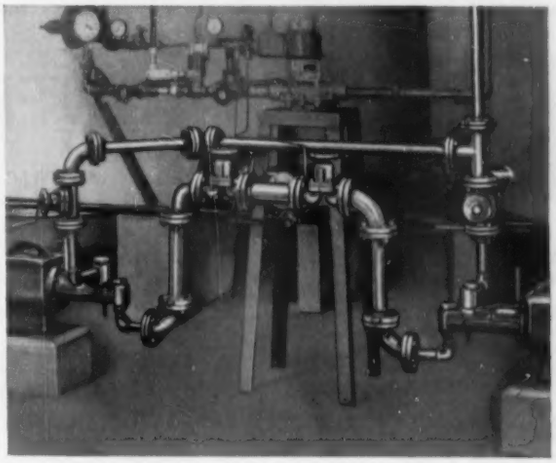
DOW

# SARAN LINED PIPE HANDLES 65% ALUM SOLUTION

**Large Southeastern Paper Mill Uses Saran Lined Pipe, Fittings and Valves to Eliminate Corrosion Problems**



All paper mill operators are familiar with the corrosion problems involved in handling alum solutions. Saran lined pipe, fittings and valves offer an exceptionally satisfactory answer to these difficulties by providing freedom from chemical attack *plus* these extra advantages:

| | |
|---|---|
| Temperature range | —0°F. to +194°F. |
| Field fabrication | easily accomplished |
| Pressure resistance | 150 psi (with cast iron fittings) |
| Joint tightness | unexcelled dependability |
| Service life | indefinitely long |
| Availability | immediate |

We'll be glad to assist with your installation plans. Contact your nearest branch office or write THE DOW CHEMICAL COMPANY, Midland, Michigan.

RELATED SARAN PRODUCTS—Saran rubber tank lining • Saran rubber molding stock • Saran tubing and fittings • Saran pipe and fittings.

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Plastics Sales Department, PL1161E, Midland, Michigan

Please send me a copy of your catalog on saran lined pipe, fittings and valves.

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DOW

PULP & PAPER

# ADVERTISERS' INDEX

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RCI's wet strength

# BECKAMINE P-682-35

is also great for dry strength and wax pick!

Time and again we've told you how decidedly this urea-formaldehyde, cationic-type Reichhold resin increases wet strength.

But, just as emphatically, versatile P-682-35 boosts dry strength and Dennison wax . . . *with or without starch*, when added to bleached and unbleached kraft or sulfite, ground wood, rag or mixes of these pulps. This product also . . .

**1. Makes rosin size go further.** Save 50-70% of the rosin size you now use just by adding 0.5% of P-682-35 solids after the refining operation. Rosin size is distributed and retained better due to the strong cationic charge on P-682-35.

**2. Produces superior tub and calender sizing** in conjunction with starch. It aids in laying fuzz, improves scuff resistance and dimensional stability, waterproofs the starch.

For details, write for Technical Bulletin P-2.

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*in Progress*

Synthetic Resins
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Phenol
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Maleic Anhydride
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